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Timber Resource of Wisconsin's Northeast Survey Unit, 1983

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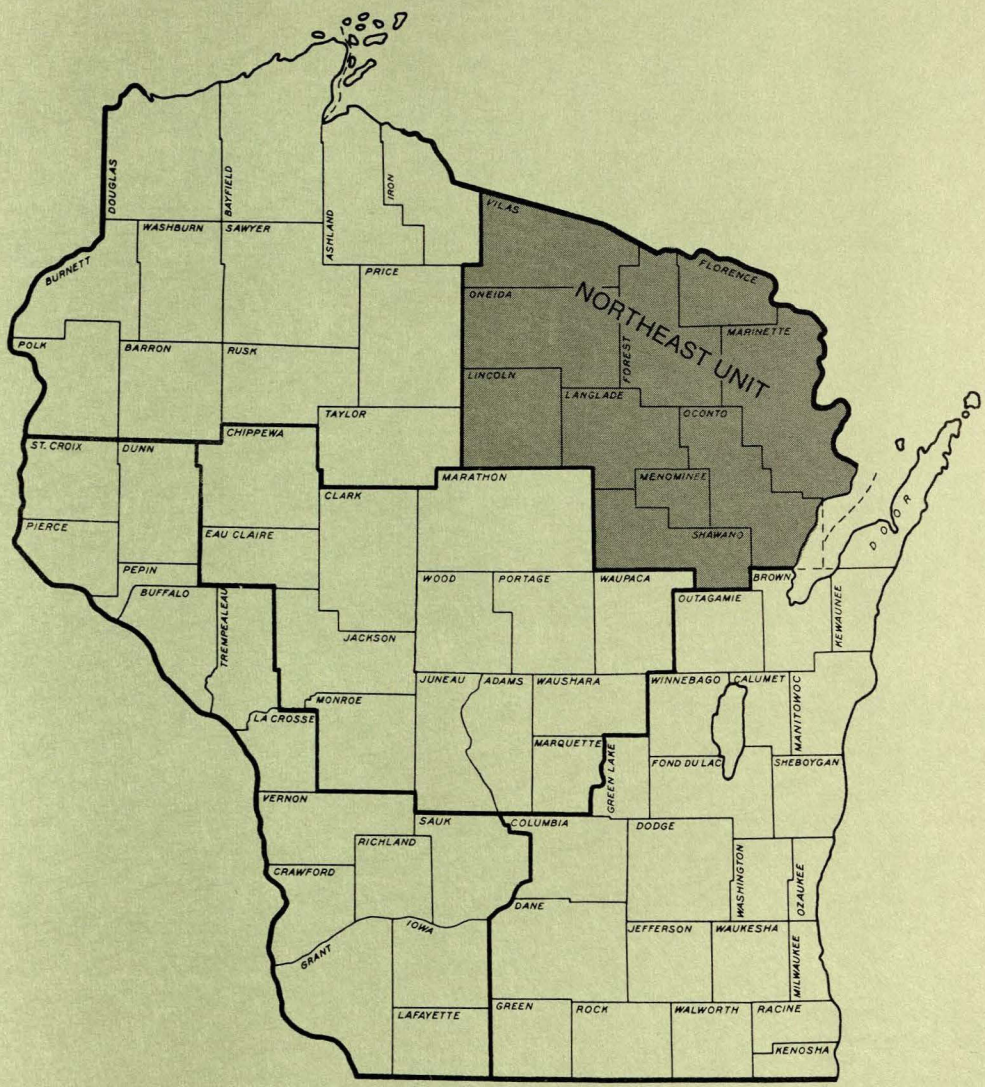

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Information contained in this report includes the most commonly used Forest Inventory and Analysis statistics. However, additional forest resource data can be provided to interested users. Persons requesting additional information that can be provided from the raw inventory data are expected to pay for the retrieval costs. These costs will vary depending on the complexity of the request, from less than $100 for a relatively simple request to $2,000 for a complex retrieval involving the services of a Forest Inventory and Analysis computer programmer. If requests for data conflict with ongoing Forest Inventory and Analysis work, they will be scheduled so as to minimize the impact on the work unit.

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Area served: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, eastern South Dakota, Wisconsin.

FOREWORD

Forest Inventory and Analysis (FIA) is a continuing endeavor as mandated by the Renewable Forest and Rangeland Resources Planning Act of 1974. Prior inventories were mandated by the McSweeney-McNary Forest Research Act of 1928. The objective of FIA is to periodically inventory the Nation's forest land to determine its extent, condition, and volume of timber, growth, and depletions. Up-to-date resource information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are responsible for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for forest resource evaluation in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, eastern South Dakota, and Wisconsin.

Fieldwork for the Wisconsin Statewide forest inventory was begun in the summer of 1981 and completed in late 1983. Reports on the three previous inventories of Wisconsin's timber resource are dated 1936, 1956, and 1968.

More accurate survey information was obtained during the 1983 survey than otherwise would have been feasible because of intensified field sampling. Such sampling was made possible by additional funding and field personnel provided the North Central Station by the Wisconsin State Legislature through the Department of Natural Resources. Data from the Departments' canvass of all primary wood-using plants in the State was used to help estimate the quantity of timber products harvested in Wisconsin.

Aerial photos used in the Northeast Unit Forest Inventory were furnished by the Wisconsin Department of Natural Resources, the USDA Agricultural Stabilization and Conservation Service, and the Chequamegon and Nicolet National Forests.

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TIMBER RESOURCE OF WISCONSIN'S NORTHEAST SURVEY UNIT, 1983

Mark H. Hansen, *Biometrician*

HIGHLIGHTS

Forest Area

- Forest land accounted for 4.0 million acres (71 percent of the Unit's land area) in 1983, this constitutes a 4.6 percent decline since 1968.
- Commercial forest land occupied 3.8 million acres in 1983—a decline of 5.7 percent from the 4.1 million acres in 1968.
- Productive-reserved forest land totaled 52,000 acres in 1983, compared to 1,800 acres in 1968. Major additions since 1968 include the Blackjack Springs Wilderness Area, Wisker Lake Wilderness Area, and Roadless Area Review and Evaluation (RARE II) areas in the Nicolet National Forest.
- Marinette County contained the largest area of commercial forest in 1983 (639,700 acres) and in 1968 (649,900 acres).
- Farmers and miscellaneous private individuals continued to hold 40 percent of the commercial forest (1.6 million acres in 1968 and 1.5 million acres in 1983). A new definition of farm ownership shifted much of what was previously in the farmer category to the miscellaneous private category.
- County and municipal agencies owned 646,900 acres of commercial forest in 1983 (17 percent).
- The aspen and maple-birch forest types continue to dominate the commercial forest land base in 1983 comprising 60 percent of the commercial forest area.
- Sapling and seedling stands occupied 24 percent of the commercial forest in 1983 as compared to 31 percent in 1968.
- Sawtimber stands, which increased by 331,300 acres between surveys, amounted to 28 percent of commercial forest in 1983, compared to 18 percent 1968.
- Seventy-one percent (118,100 acres) of the commercial plantation area is in the red pine type.
- Twenty-four percent of all commercial forest area has balsam fir as a prominent conifer in the understory.
- Less than 5 percent of all forest land is unproductive or reserved.
- Stands aged 70 years or more increased from 15 percent of the commercial forest area in 1968 to 21 percent in 1983.
- The average site index for commercial forest land in the Unit is 63 feet at age 50.

Timber Volume

- The volume of growing stock in 1983 was 4.5 billion cubic feet, 23 percent greater than the 3.6 billion in 1968.
- Sawtimber volume amounted to 9.9 billion board feet in 1983, 35 percent greater than the 1968 volume.
- The 3.1 billion cubic feet of hardwoods make up 68 percent of the growing-stock volume.
- Red pine growing-stock volume increased 123 percent since 1968. Ingrowth of plantations to merchantable size was the dominant factor in this dramatic increase.
- The maples (938 million cubic feet), aspens (744 million), and pines (571 million) contain the highest volumes, and together account for more than 50 percent of the growing-stock volume.
- Average growing-stock volume per acre in 1983 was 1,169 cubic feet, compared to 893 cubic feet in 1968.
- Forty-nine percent of the growing-stock volume is in stands from 41- to 70-years-old.
- Nearly two-thirds of the sawtimber volume is in trees with grade 3 butt logs. Tree diameter is generally the limiting criteria.
- The volume in cull trees (rough, rotten, and short-log cull) is 361 million cubic feet; salvable dead tree volume is 82 million cubic feet.

Stand Conditions

- Net annual growth on growing-stock trees was 138 million cubic feet in 1982.

- The net annual growth rate of growing stock was 3.1 percent of inventory in 1982.
- Net growth averaged 36.1 cubic feet per acre in 1982.
- Annual mortality of growing stock amounted to 37 million cubic feet (0.8 percent of inventory) in 1982.
- Disease accounted for 19 percent of the mortality in 1982; chiefly diseases of aspen and elm.

Timber Use

- Timber removals from growing stock in 1982 totaled nearly 103 million cubic feet (2.3 percent of inventory), compared to 74 million cubic feet (2.0 percent of inventory) in 1967.
- The aspens made up 40 percent of the 1982 removals volume, although they account for only 17 percent of the growing-stock volume.
- Output of roundwood products totaled 120 million cubic feet in 1981; 58 percent was pulpwood, 19 percent was fuelwood, and 22 percent was saw logs.
- Wood residue from primary plants totaled 14.9 million cubic feet in 1981, 98 percent of which was used.

Biomass

- Highest yields of live tree biomass are in the white pine (87 green tons per acre), the maple-birch (84 tons), and the oak-hickory (83 tons) forest types.
- Live tree biomass (trees greater than 1-inch in d.b.h.) totaled 258 million green tons (67 tons per acre) in 1983, with just over half in the boles of growing-stock trees.

APPENDIX

ACCURACY OF SURVEY

Forest Inventory and Analysis information is based on a sampling procedure designed to provide reliable statistics at the State and Unit levels. Consequently, the reported figures are estimates only. A measure of reliability of these figures is given by sampling errors. These sampling errors mean that the chances are two out of three that if a 100-percent inventory had been taken, using the same methods, the results would have been within the limits indicated.

For example, the estimated growing-stock volume in the Northeast Unit in 1983, 4,474.1 million cubic feet, has a sampling error of ±1.78 percent (±79.6 million cubic feet). The growing-stock volume from a 100-percent inventory would be expected to fall between 4,394.5 and 4,553.7 million cubic feet (4,474.1 ±79.6), there being a one in three chance that this is not the case.

Sampling errors were calculated separately for National Forest land and other land because of the difference in the way the inventories were conducted. For example, the sampling error for growing-stock volume on land other than National Forest is ±1.94 percent but for Nicolet National Forest land it is ±3.48 percent. Different survey intensities resulted in different sampling errors.

The following tabulation shows the sampling errors for the 1983 Northeast Unit Forest Inventory:

Item	Unit totals	Sampling error
Growing stock	(Million cubic feet)	(Percent)
Volume	4,474.1	1.78
Growth	138.2	2.32
Removals	102.7	15.84
Sawtimber	(Million board feet[1])	
Volume	9,868.7	3.05
Growth	392.5	3.29
Removals	276.6	19.52
Commercial forest land	(Thousand acres) 3,828.5	0.44

As survey data are broken down into sections smaller than Survey Unit totals, the sampling error increases. For example, the sampling error for growing-stock volume in a particular county is higher than that for total growing-stock volume in the Unit (table 66 shows the sampling errors for estimates smaller than Unit totals).

SURVEY PROCEDURES

We used a two-phase sampling design for the 1983 Wisconsin survey. This sampling scheme and associated estimators are similar to sampling with partial replacement (SPR) in that a set of randomly located plots was available for remeasurement and a set of

[1]*International ¼-inch rule.*

new randomly located plots were established and measured. Major enhancements in the new Wisconsin design were stratification for disturbance on the old sample and use of a growth model to improve regression estimates made on the old undisturbed forest plots. The growth model used was the Stand and Tree Evaluation and Modeling System (STEMS).[2]

The major steps in the new survey design were as follows:

1. The first phase of the survey was to interpret aerial photos. In this phase two sets of random points were located on current aerial photographs. The first was a set of new photo points and the second was a set of relocated old photo points (ground plot locations from the previous inventory). A total of 30,080 1-acre points, including old ground sample locations, were systematically distributed across aerial photos of the entire Unit, except the Chequamegon and Nicolet National Forests. These points were classified into land classes as shown below to make a preliminary estimate of forest area. Next, a total of 21,516 of these points were stereoclassified as to stand-size class and density. Finally, a total of 2,794 points were examined on the ground to correct the preliminary area estimate for errors in classification and for actual changes in land use since the photos were taken.

Land class	Photo points classified	Photo points stereoclassified	Inventory plots checked
Forest land	21,003	21,003	1,948
Unproductive/reserved forest land	111	111	11
Nonforest land			
with trees	402	402	51
without trees	6,971	0	642
water	1,593	0	142
Total	30,080	21,516	2,794

2. The second phase of the survey was to sample ground plots. The plot selection and measurement procedures of phase two of the new Wisconsin survey design are outlined in figure 1.

From the new photo points, a random sample of ground plots were established and land use, volume, mortality and cutting were recorded. At each forest ground plot location, variable-radius plots (basal area factor 37.5) were established at 10 points uniformly

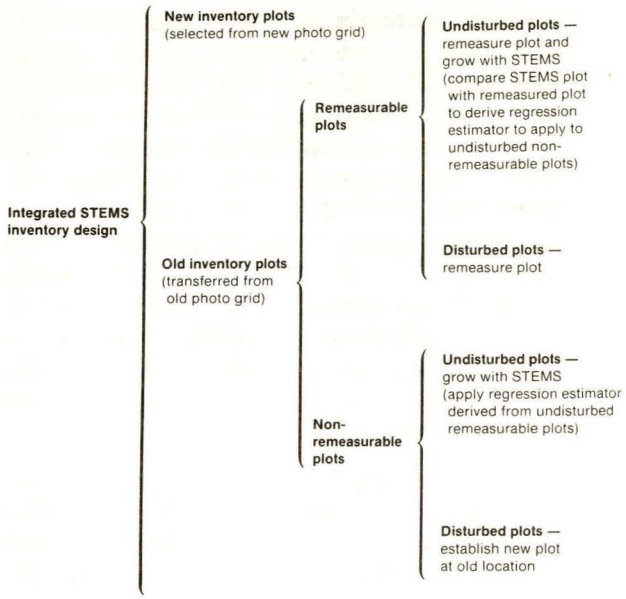
Integrated STEMS inventory design
New inventory plots (selected from new photo grid)
Old inventory plots (transferred from old photo grid)
Remeasurable plots
Non-remeasurable plots
Undisturbed plots — remeasure plot and grow with STEMS (compare STEMS plot with remeasured plot to derive regression estimator to apply to undisturbed non-remeasurable plots)
Disturbed plots — remeasure plot
Undisturbed plots — grow with STEMS (apply regression estimator derived from undisturbed remeasurable plots)
Disturbed plots — establish new plot at old location

Figure 1.—*Logic structure for the 1983 Wisconsin sample design.*

placed over the sample acre. These locations were monumented for future remeasurement.

On the old inventory photo points (old plot locations) we used a somewhat different procedure. Old plots were either remeasurable (monumented) or nonremeasurable (not monumented and thus difficult to relocate). Within both of these groups, old plots were additionally identified as undisturbed or disturbed. The remeasurable old inventory photo points which are classified as forest undisturbed were remeasured on the ground to obtain current land use, volume, growth, and removals data. Additionally, all forest undisturbed remeasurable plots were projected to the current time using STEMS to provide estimates of current volume and growth. The comparison of the projected and observed values on these plots provided regression estimators to adjust the projected values of the undisturbed nonremeasurable plots. All disturbed remeasurable plots were remeasured on the ground to assess changes since the last inventory.

Disturbance as used here refers to any change on a plot that can be detected on aerial photos and that the STEMS growth processor cannot predict, such as catastrophic mortality, cutting, seedling stands, and land use change.

The nonremeasurable forest points are those that were not monumented during the 1968 inventory but played a crucial role in the new survey design. The nonremeasurable undisturbed forest points were visited on the ground at the time of the last survey and

[2]*For more information on STEMS, see: Belcher, D. L.; Holdaway, M. R.; Brand, G. J. A description of STEMS: The stand and tree evaluation and modeling system. Gen. Tech. Rep. NC-79. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1981. 18 p.*

following careful examination of both past and current photographs it was determined that nothing happened that STEMS was unable to simulate. STEMS was then used to update the old plot and tree data to produce an estimate of current data. Thus these points became ground plots even though the information was obtained without actually visiting the plot. The plot record for each updated plot was sent to the field for verification of current ownership information. For points classified as disturbed, a new ground plot was established as close to the old location as possible. This allowed information about land use trends to be recorded even though the old plot could not be exactly relocated for remeasurement.

The estimation procedure for computing statistics from this sampling design was more complicated than the simple two-phase estimation procedure used in the past. In fact, this procedure yielded two independent samples, one coming from the new photo points and the other from the old photo points that were remeasured or projected. A more detailed description of the sampling design is available in a separate publication.[3]

3. Under an agreement with National Forest Region 9, North Central crews remeasured 10-point variable radius plots on the Chequamegon and Nicolet National Forests at the same time they remeasured other plots in the Northwest Unit. The Chequamegon and Nicolet National Forests provided the Station with area of commercial forest land by forest type, stand-size class, and density for the Forest. The Station then computed volume, growth, and mortality statistics. Area and volume tables for the Forest were approved by the National Forest staff before publication.

4. Statistics on timber utilization during 1981 were obtained from mill surveys. The Wisconsin Department of Natural Resources canvassed resident sawmills, veneer mills, and other primary wood-using plants. The North Central Forest Experiment Station canvassed out-of-State sawmills, pulpmills, and veneer mills to determine their use of Wisconsin timber. Fuelwood and fencepost output was based on a sample of public and private landowners to determine their production of fuelwood and fenceposts. Estimates of primary mill residue used for fuelwood were obtained from the canvass of Wisconsin primary wood-using plants.

5. A total of 2,568 felled trees on 133 active logging operations were measured throughout the State during 1981-1982 to develop wood utilization factors for converting timber products output to timber removals for saw logs and pulpwood. Factors for all other products were obtained during the 1966-1967 Wisconsin utilization study.

6. Field data were sent to St. Paul, Minnesota, to be processed and analyzed.

COMPARING WISCONSIN'S FOURTH INVENTORY WITH THE THIRD INVENTORY

Data from new forest inventories are often compared with data from earlier inventories to determine trends in forest resources. However, changes in procedures and definitions between surveys often make it necessary to adjust earlier survey data so that they are comparable to data from the new survey. A consistency check will be made for each Forest Unit in Wisconsin to ensure that the changes observed between inventories reflect actual changes in the resource and not changes in definitions or procedures.

Identifying and Correcting Procedural Changes

Between the 1968 and 1983 inventories of Northeast Wisconsin some procedural changes were made in the method of deriving annual mortality estimates and determining forest type.

Mortality figures for the 1968 inventory were based on field estimates from nonremeasurement plots. Information gathered on remeasurement plots during the current inventory was used to adjust the 1968 mortality figures. This adjustment also changed the estimate of net growth for the 1968 inventory. Additionally, the old spruce-fir forest type was separated into two distinct types for the new inventory—white spruce and balsam fir. Comparisons with old data may be made by adding the two new types together. Volumes for hard and soft maple in 1968 were adjusted upwards by 17 percent due to the discovery that the volume equations used for these species in 1968 were in error. Ownership class definitions also changed between the two inventories. A new definition of Indian ownership shifted a large area reported in 1968 as forest industry owned to the Indian ownership class in this report. Also, a change in the definition of farmer ownership shifted area reported in 1968 as farmer owned to the miscellaneous private ownership class in this report.

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[3]*Hahn, J. T.; Hansen, M. H.; Fairweather, S. E. A sampling procedure incorporating a growth simulator. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; (Manuscript in process).*

Except for the net growth and mortality information, volumes of hard and soft maple, and some ownership classes, the old and new inventories of this region may be directly compared.

Checking for Consistency

A test was made to ensure that it was possible to move from the adjusted 1968 resource statistics to the 1983 values by means of Timber Resource Analysis System (TRAS), a USDA Forest Service computer program for updating, backdating, and projecting timber volume, growth, mortality, and removals. Using the adjusted 1968 numbers of softwood and hardwood trees by 2-inch diameter class and applying 1983 cubic feet per tree estimates, volumes were generated for the 1968 inventory that are comparable with 1983 volumes. Then, using growth rates, mortality rates, and removals rates for the period between the two surveys, TRAS projected the inventory from 1968 to 1983. The program prints out volumes by diameter class for softwoods and hardwoods for selected years in the period. Thus, inconsistencies in volume, growth, mortality, and removals were identified and resolved.

TRAS generates an estimate of what total removals had to be for the inventory to have changed as it did between surveys, given the volume, growth, and mortality data. Estimates of removals for products and for logging residues, two of the three components of total timber removals, were available from an independent utilization study. An estimate of "other" removals (see Definition of Terms in Appendix), the third component of total removals, was made by subtracting the first two removals components from the TRAS-generated total removals estimate. This estimate of "other" removals was compared with findings from remeasurement plots and new plots (stump counts and land use change) to check its validity. When necessary, TRAS was rerun and adjusted until other removals were compatible with the estimate from field data. Total removals were "trend level removals" because the estimate of "other" removals was based on a removals trend line from 1968 to 1983.

LOG GRADE

In Wisconsin's Northeast Unit the butt log of every sawtimber tree on every full permanent sample plot was graded for quality.

Butt logs were graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to "Hardwood Log Grades for Standard Lumber."[4] The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log-grade standards, was graded as follows:

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[4] *Vaughn, C. L.; Wollin, C. A.; McDonald, K. A.; Bulgrin, E. H. Hardwood log grades for standard lumber. Res. Pap. FPL-63. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory; 1966. 52 p.*

Forest Service standard grades for hardwood factory saw logs

Grading factors		Specifications							
		Log grade 1			Log grade 2				Log grade 3
Position in tree		Butts only	Butts and uppers		Butts and uppers				Butts and uppers
Scaling diameter, inches		[1]13-15	16-19	20+	[2]11+		12+		8+
Length without trim, feet			10+		10+	8-9	10-11	12+	8+
Required clear cuttings[3] of each of three best faces[4]	Min. length, feet	7	5	3	3	3	3	3	2
	Max. number	2	2	2	2	2	2	3	No Limit
	Min. proportion of log length required in clear cutting	5/6	5/6	5/6	2/3	3/4	2/3	2/3	1/2
Maximum sweep and crook allowance	For logs with less than one-fourth of end in sound defects		15 percent			30 percent			50 percent
	For logs with more than one-fourth of end in sound defects		10 percent			20 percent			35 percent
Maximum scaling deduction			40 percent[5]			50 percent[6]			50 percent

[1]Ash and basswood butts can be 12 inches if they otherwise meet requirements for small #1's.
[2]Ten-inch logs of all species can be #2 if they otherwise meet requirements for small #1's.
[3]A clear cutting is a portion of a face, extending the width of the face, that is free of defects.
[4]A face is one-fourth of the surface of the log as divided lengthwise.
[5]Otherwise #1 logs with 41-60 percent deductions can be #2.
[6]Otherwise #2 logs with 51-60 percent deductions can be #3.

Forest Service standard specifications for hardwood construction logs (tie and timber logs)[1]

Position in tree		Butt and upper
Min. diameter, small end		8 inches +
Min. length, without trim		8 feet
Clear cuttings		No requirements.
Sweep allowance, absolute		One-fourth of the diameter at the small end for each 8 feet of length.
Sound surface defects	Single knots	Any number, if no one knot has an average diameter above the callus in excess of one-third of the log diameter at point of occurrence.
	Whorled knots	Any number if sum of knot diameters above the callus does not exceed one-third of the log diameter at point of occurrence.
	Holes	Any number provided none has a diameter over one-third of the log diameter at point of occurrence, and none extends more than 3 inches into included timber.[2]
Unsound surface defects		Same requirements as for sound defects if they extend into included timber.[2] No limit if they do not.
End defects	Sound	No requirements.
	Unsound	None allowed; log must be sound internally, but will admit one shake not to exceed one-fourth the scaling diameter and will admit a longitudinal split not extending more than 5 inches into the contained timber.

[1]These specifications are minimum for the class. If, from a group of logs, factory logs are selected first, thus leaving only nonfactory logs from which to select construction logs, then the quality range of the construction logs so selected is limited, and the class may be considered a grade. If selection for construction logs is given first priority, it may be necessary to subdivide the class into grades.

[2]Included timber is always square, and dimension is judged from small end.

Softwood species were graded according to the following specifications on the following page.

Log Grades for Eastern White Pine

Log grade	Minimum size Diameter	Length[1]	Sweep or crook allowance	Total cull allowance including sweep	Maximum weevil injury	Allowable knot size (inches)[2] on three best faces or minimum clearness on four faces
	(Inches)	*(Feet)*	*(Percent)*		*(Number)*	*(Inches)*
1	12 & 13	8-16	20	50	0	Four faces clear full length
	14+	10-16	20	50	0	Two faces clear full length, or four faces clear 50 percent length (6 feet min. length)[3]
2	6+	8-16	30	50	0	Sound knots 1.e[4] D/6 and less than 3 inches.[5] Unsound knots: 1.e. 1½ inches and for: butt, logs 1.e. D/12, upper logs 1.e.D/10, or four faces clear 50 percent of length
3	6+	8-16	40	50	8-foot logs: 1 weevil 10-foot+ logs: 2 weevils	Sound knots 1.e.D/3 and less than 5 inches. Unsound knots 1.e. D/6 and less than 2½ inches.
4	6+	8-16	50	50	No limit	No limit

[1]Plus trim.
[2]Disregard all knots less than ½-inch diameter in all grades.
[3]The sum of the diameter of sound knots plus twice the sum of the diameter of unsound knots (in inches) in less than or equal to half of the diameter of the log (inches).
[4]I.e. means less than or equal to.
[5]D means d.i.b. of log at location of knot.

LOG GRADES FOR JACK PINE AND RED PINE

Grade 1: logs with three or four clear faces.[5]

Grade 2: logs with one or two clear faces.

Grade 3: logs with no clear faces.

After the tentative log grade is established, the log will be degraded one grade for each of the following, except that no log can be degraded below grade 3. Net scale after deduction for defect must be at least 50 percent of the gross contents of the log.

1. *Sweep.* Degrade any tentative 1 or 2 log one grade if sweep amounts to 3 or more inches and equals or exceeds one-third the diameter inside bark at small end.

2. *Heart rot.* Degrade any tentative 1 or 2 log one grade if conk, massed hyphae, or other evidence of advanced heart rot is found anywhere in it.

[5]*A face is one fourth of the circumference in width extending full length of the log. Clear faces are those free of: knots measuring more than ½-inch in diameter, overgrown knots of any size, holes more than ¼-inch in diameter. Faces may be rotated to obtain the maximum number of clear ones.*

LOG GRADES FOR ALL OTHER SOFTWOOD LOGS

Grade 1

1. Logs must be 16 inches in diameter or larger, 10 feet in length or longer, and have not more than 30 percent of gross scale deducted for defect.

2. Logs must be at least 75 percent clear on each of three faces.

3. All knots outside clear cutting must be sound and not more than 2½-inches in size.

Grade 2

1. Logs must be 12 inches in diameter or larger, 10 feet in length or longer, and have a net scale of at least 50 percent of the gross contents of the log after deduction for defect.

2. Logs must be at least 50 percent clear on each of three faces or 75 percent clear on two faces.

Grade 3

1. Logs must be 6 inches in diameter or larger, 8 feet in length or longer, and have a net scale of at least 50 percent of the gross contents of the log after deduction for defect.

Note: (A) Diameters are diameter inside bark (d.i.b.) at small end of log.
(B) Percent clear refers to percent clear in one continuous section.

TREE SPECIES GROUPS IN WISCONSIN[6]

SOFTWOODS
- Jack pine ..... *Pinus banksiana*
- Red pine ..... *Pinus resinosa*
- Eastern white pine ..... *Pinus strobus*
- White spruce ..... *Picea glauca*
- Black spruce ..... *Picea mariana*
- Balsam fir ..... *Abies balsamea*
- Eastern hemlock ..... *Tsuga canadensis*
- Tamarack ..... *Larix laricina*
- Northern white-cedar ..... *Thuja occidentalis*
- Other softwoods
  - Eastern redcedar ..... *Juniperus virginiana*
  - Norway spruce ..... *Picea abies*
  - Scotch pine ..... *Pinus sylvestris*

HARDWOODS
- White oaks
  - White oak ..... *Quercus alba*
  - Swamp white oak ..... *Quercus bicolor*
  - Bur oak ..... *Quercus macrocarpa*
  - Chinkapin oak ..... *Quercus muehlenbergii*
- Select red oak
  - Northern red oak ..... *Quercus rubra*
- Other red oaks
  - Northern pin oak ..... *Quercus ellipsoidalis*
  - Black oak ..... *Quercus velutina*
- Select hickory
  - Shagbark hickory ..... *Carya ovata*
- Other hickory
  - Bitternut hickory ..... *Carya cordiformis*
- Yellow birch ..... *Betula alleghaniensis*
- Hard maple
  - Sugar maple ..... *Acer saccharum*
  - Black maple ..... *Acer nigrum*
- Soft maples
  - Red maple ..... *Acer rubrum*
  - Silver maple ..... *Acer saccharinum*
- Ashes
  - White ash ..... *Fraxinus americana*
  - Black ash ..... *Fraxinus nigra*
  - Green ash ..... *Fraxinus pennsylvanica*
- Balsam poplar ..... *Populus balsamifera*
- Eastern cottonwood ..... *Populus deltoides*
- Sycamore ..... *Platanus occidentalis*
- Aspens
  - Bigtooth aspen ..... *Populus grandidentata*
  - Quaking aspen ..... *Populus tremuloides*
- American basswood ..... *Tilia americana*
- Beech ..... *Fagus grandifolia*
- Black walnut ..... *Juglans nigra*
- Black cherry ..... *Prunus serotina*
- Butternut ..... *Juglans cinerea*
- Elms
  - American elm ..... *Ulmus americana*
  - Slippery elm ..... *Ulmus rubra*
  - Rock elm ..... *Ulmus thomasii*
- Hackberry ..... *Celtis occidentalis*
- Paper birch ..... *Betula papyrifera*
- Black willow ..... *Salix nigra*
- Other hardwoods
  - Boxelder ..... *Acer negundo*
  - Black locust ..... *Robinia pseudoacacia*
  - Honeylocust ..... *Gleditsia triacanthos*
  - River birch ..... *Betula nigra*
  - Red mulberry ..... *Morus rubra*
  - Blackgum ..... *Nyssa sylvatica*
  - Northern Catalpa ..... *Catalpa speciosa*
- Noncommercial species
  - Mountain maple ..... *Acer spicatum*
  - Eastern hophornbeam ..... *Ostrya virginiana*
  - Peachleaf willow ..... *Salix amygdaloides*
  - American hornbeam ..... *Carpinus caroliniana*
  - Hawthorn ..... *Crataegus* spp.
  - Striped maple ..... *Acer pensylvanicum*
  - Mountain ash ..... *Sorbus* spp.
  - Pin cherry ..... *Prunus pensylvanica*
  - Chokecherry ..... *Prunus virginiana*

[6]*The common and scientific names are based on: Little, Elbert L. Check list of native and naturalized trees of the United States. Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture, Forest Service; 1979. 375 p.*

METRIC EQUIVALENTS OF UNITS USED IN THIS REPORT

1 acre = 4,046.86 square meters or 0.405 hectare.
1,000 acres = 405 hectares.
1 cubic foot = 0.0283 cubic meter.
1 foot = 30.48 centimeters or 0.3048 meter.
1 inch = 25.4 millimeters, 2.54 centimeters, or 0.0254 meter.
1 pound = 0.454 kilogram.
1 ton = 0.907 metric ton.

DEFINITION OF TERMS

Basal area.—The area in square feet of the cross section at breast height of a single tree. When the basal area of all trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Biomass.—The above-ground volume of all live trees (including bark and foliage). Biomass is made up of 5 components:

Growing-stock bole.—Biomass of a growing-stock tree from a 1-foot stump to a variable 4-inch top.

Growing-stock tops and limbs.—Biomass of a growing-stock tree from a 1-foot stump minus the growing-stock bole.

Cull bole.—Biomass of a cull tree from a 1-foot stump to a variable 4-inch top.

Cull tops and limbs.—Biomass of a cull tree from a 1-foot stump minus the cull bole.

1- to 5-inch trees.—Biomass of all live trees from 1-to 5-inches in diameter at breast height.

Commercial forest land.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as commercial forest land are capable of producing more than 20 cubic feet per acre per year of annual growth when managed. Currently inaccessible and inoperable areas are included except when the areas involved are small and unlikely to become suitable for producing industrial wood in the foreseeable future.)

Commercial species.—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam and hawthorn.)

County and municipal land.—Land owned by counties and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Cull.—Portions of a tree that are unusable for industrial wood products because of rot, form, or other defect.

Diameter classes.—A classification of trees based on diameter outside bark, measured at breast height (4-½ feet above the ground). (Note: d.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in Forest Survey, with the even inch the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.)

Farm.—Any land from which $1,000 or more of agricultural products were produced and sold during the year.

Farmer-owned land.—Land owned by farm operators. (Note: Excludes land leased by farm operators from nonfarm owners, such as railroad companies and States.)

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide. Also see definitions for land area, commercial forest land, noncommercial forest land, productive-reserved forest land, stocking, unproductive forest land, and water.

Forest industry land.—Land owned by companies or individuals operating primary wood-using plants.

Forest trees.—Woody plants having a well-developed stem and usually more than 12 feet tall at maturity.

Forest type.—A classification of forest land based on the species forming a plurality of live tree stocking. Major forest types in the State are:

Jack pine.—Forests in which jack pine comprises a plurality of the stocking. (Common associates include eastern white pine, red pine, aspen, birch, and oak.)

Red pine.—Forests in which red pine comprises a plurality of the stocking. (Common associates include eastern white pine, jack pine, aspen, birch, and oak.)

White pine.—Forests in which eastern white pine comprises a plurality of the stocking. (Common associates include red pine, aspen, birch, and maple.)

Balsam fir.—Forests in which balsam fir and white spruce comprise a plurality of the stocking with balsam fir the most common. (Common associates include white spruce, aspen, maple, birch, northern white-cedar, and spruce.)

White spruce.—Forests in which white spruce and balsam fir comprise a plurality of the stocking with white spruce the most common. (Common associates include balsam fir, aspen, maple, birch, and northern white-cedar.)

Black spruce.—Forests in which swamp conifers comprise a plurality of the stocking with black spruce the most common. (Common associates include tamarack, northern white-cedar, and balsam fir.)

Northern white-cedar.—Forests in which swamp conifers comprise a plurality of the stocking with northern white-cedar the most common. (Common associates include balsam fir, black ash, spruce, and black spruce.)

Tamarack.—Forests in which swamp conifers comprise a plurality of the stocking with tamarack the most common. (Common associates include black spruce, balsam fir, and aspen.)

Oak-hickory.—Forests in which northern red oak, white oak, bur oak, or hickories, singly or in combination, comprise a plurality of the stocking. (Common associates include jack pine, aspen, birch, and maple.)

Elm-ash-soft maple.—Forests in which lowland elm, ash, cottonwood, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include aspen, birch, and balsam fir.)

Maple-birch.—Forests in which sugar maple, basswood, yellow birch, elm, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include white pine, elm, hemlock, and basswood.)

Aspen.—Forests in which quaking aspen or bigtooth aspen, singly or in combination, comprise a plurality of the stocking. (Common associates include oak, pine, balsam fir, and paper birch.)

Paper birch.—Forests in which paper birch comprises a plurality of the stocking. (Common associates include maple, aspen, and balsam fir.)

Exotic.—Forests in which species not native to the State comprise a plurality of the stocking. (Mostly Scotch pine plantations.)

Gross area.—The entire area of land and water as determined by the Bureau of the Census, 1970.

Growing-stock trees.—Live trees of commercial species, excluding rough and rotten trees.

Growing-stock volume.—Net volume in cubic feet of growing-stock trees 5 inches d.b.h. and over, from a 1-foot stump to a minimum 4 inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs. Cubic feet can be converted to standard cords by dividing by 79. One standard cord is 128 cubic feet of stacked wood, including bark and air.

Hardwoods.—Dicotyledonous trees, usually broadleaved and deciduous.

Idle farmland.—Includes former cropland, orchards, improved pastures, and farm sites not tended within the past 2 years and presently less than 16.7 percent stocked with trees.

Improved pasture.—Land currently improved for grazing by cultivating, seeding, irrigating, or clearing of trees or brush and less than 16.7 percent stocked with live trees.

Indian land.—All lands held in trust by the United States for individual Indians or tribes, or all lands, titles to which are held by individual Indians or tribes, subject to Federal restrictions against alienation.

Land area.—A. *Bureau of the Census.* The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than one-eighth of a statute mile wide; and lakes, reservoirs, and ponds less than 40 acres in area.

B. *Forest Inventory and Analysis.* The same as the Bureau of the Census, except minimum width of streams, etc., is 120 feet and minimum size of lakes, etc., is 1 acre.

Live trees.—Growing-stock, rough, and rotten trees 1 inch d.b.h. and larger.

Log grades.—A classification of logs based on external characteristics as indicators of quality or value. (See Appendix for specific grading factors used.)

Logging residues.—The unused growing stock portions of trees cut or killed by logging.

Maintained road.—Any road, hard-topped or other surfaces, that is plowed or graded at least once a year. Includes rights-of-way that are cut or treated to limit herbaceous growth.

Marsh.—Nonforest land that characteristically supports low, generally herbaceous or shrubby vegetation and that is intermittently covered with water.

Merchantable.—Refers to a pulpwood or saw log section that meets pulpwood or saw log specifications, respectively.

Miscellaneous federal land.—Federal land other than National Forest, land administered by the Bureau of Land Management, and Indian land.

Miscellaneous private land.—Privately owned land other than forest-industry and farmer-owned land.

Mortality.—The volume of sound wood in growing-stock and sawtimber trees that die annually.

National Forest land.—Federal land that has been legally designated as National Forest or purchase units, and other land administered by the USDA Forest Service.

Net annual growth of growing stock.— The annual change in volume of sound wood in live sawtimber and poletimber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

Net annual growth of sawtimber.—The annual change in the volume of live sawtimber trees and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes.

Net volume.—Gross volume less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial forest land.—(a) Unproductive forest land and (b) productive-reserved forest land.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonforest land.—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development

for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide and more than 1 acre in area to qualify as nonforest land.)

a. *Nonforest land without trees.*—Nonforest land with no live trees present.

b. *Nonforest land with trees.*—Nonforest land with one or more trees per acre at least 5 inches d.b.h.

Nonstocked land.—Commercial forest land less than 16.7 percent stocked with growing-stock trees.

Other removals.—Growing-stock trees removed but not utilized for products, or trees left standing but "removed" from the commercial forest land classification by land use change. Examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

Ownership.—Property owned by one owner, regardless of the number of parcels in a specified area.

Ownership size class.—The amount of commercial forest land owned by one owner, regardless of the number of parcels.

Owner tenure.—The length of time a property has been held by the owner.

Physiographic class.—A measure of soil and water conditions that affect tree growth on a site. The physiographic classes are:

Xeric sites.—Very dry soils where excessive drainage seriously limits both growth and species occurrence. Example: sandy jack pine plains.

Xeromesic sites.—Moderately dry soils where excessive drainage limits growth and species occurrence to some extent. Example: dry oak ridge.

Mesic sites.—Deep, well-drained soils. Growth and species occurrence are limited only by climate.

Hydromesic sites.—Moderately wet soils where insufficient drainage or infrequent flooding limits growth and species occurrence to some extent. Example: better drained bottomland hardwood sites.

Hydric sites.—Very wet sites where excess water seriously limits both growth and species occurrence. Example: frequently flooded river bottoms and spruce bogs.

Plant byproducts.—Plant residues used for products such as mulch, pulp chips, and fuelwood.

Plant residues.—Wood and bark materials generated at manufacturing plants during production of other products.

Poletimber stands.—(See stand-size class.)

Poletimber trees.—Growing-stock trees of commercial species at least 5 inches d.b.h. but smaller than sawtimber size.

Productive-reserved forest land.—Forest land sufficiently productive to qualify as commercial forest land but withdrawn from timber utilization through statute, administration regulation, designation, or exclusive use for Christmas tree production, as indicated by annual shearing.

Productive-deferred.—Forest land sufficiently productive to qualify as commercial forest land but presently withdrawn from timber utilization because it is being considered for possible inclusion into the Wilderness system.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, because they do not meet regional specifications for freedom from defect primarily because of rot; that is, when more than 50 percent of extra cull volume in a tree is rotten.

Rough trees.—(a) Live trees of commercial species that do not contain at least one merchantable 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, because they do not meet regional specifications for freedom from defect primarily because of roughness or poor form, and (b) all live trees of noncommercial species.

Roundwood products.—Logs, bolts, or other round sections (including chips from roundwood) cut from trees for industrial or consumer uses. (Note: Includes saw logs, veneer logs and bolts; cooperage logs and bolts; pulpwood;fuelwood; piling; poles; posts; hewn ties; mine timbers; and various other round, split, or hewn products.)

Salvable dead trees.—Standing or down dead trees considered merchantable by regional standards.

Saplings.—Live trees 1 to 5 inches d.b.h.

Sapling-seedling stands.—(See stand-size class.)

Saw log.—A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter outside bark (d.o.b.) for softwoods of 7 inches (9 inches for hardwoods) or other combinations of size and defect specified by regional standards.

Saw log portion.—That part of the bole of sawtimber trees between the stump and the saw log top.

Saw log top.—The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7 inches d.o.b. for softwoods and 9 inches d.o.b. for hardwoods.

Sawtimber stands.—(See stand-size class.)

Sawtimber trees.—Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and

meeting regional specifications for freedom from defect. Softwoods must be at least 9 inches d.b.h. Hardwoods must be at least 11 inches d.b.h.

Sawtimber volume.—Net volume of the saw log portion of live sawtimber in board feet, International ¼-inch rule, from stump to a minimum 7 inches top diameter outside bark (d.o.b.) for softwoods and, a minimum 9 inches top d.o.b. for hardwoods.

Seedlings.—Live trees less than 1 inch d.b.h. that are expected to survive. Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

Short-log (rough tree).—Sawtimber-size trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Shrub biomass.—The total above-ground weight (including the bark) of selected shrubs and trees less than 1 inch d.b.h.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands.

Site index.—An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Softwoods.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

Stand.—A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Stand-age class.—Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Stand-area class.—The extent of a continuous forested area of the same forest type, stand-size class, and stand-density class.

Stand-size class.—A classification of forest land based on the size class of growing-stock trees on the area; that is, sawtimber, poletimber, or seedlings and saplings.

a. *Sawtimber stands.*—Stands at least 16.7 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

b. *Poletimber stands.*—Stands at least 16.7 percent stocked with growing-stock trees of which half or more of this stocking is in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

c. *Sapling-seedling stands.*—Stands at least 16.7 percent stocked with growing-stock trees of which more than half of the stocking is saplings and/or seedlings.

d. *Nonstocked stands.*—Stands in which stocking of growing-stock trees is less than 16.7 percent.

State land.—Land either owned by States or leased to them, for 50 years or more.

Stocking.—The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared to the basal area and/or number of trees required to fully utilize the growth potential of the land; that is, the stocking standard.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees reach 5 inches d.b.h.

Stands are grouped into the following stocking classes:

Overstocked stands.—Stands in which stocking of trees is 134.0 percent or more.

Fully stocked stands.—Stands in which stocking of trees is from 101.0 to 133.9 percent.

Medium stocked stands.—Stands in which stocking of trees is from 61.0 to 100.9 percent.

Poorly stocked stands.—Stands in which stocking of trees is from 16.7 to 60.9 percent.

Nonstocked areas.—Commercial forest land on which stocking of trees is less than 16.7 percent.

Timber removals from growing stock.—The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals.

Timber removals from sawtimber.—The net board-foot volume of live sawtimbertrees removed for forest products annually (including roundwood products and logging residues) and for other removals.

Timber products output.—All timber products cut from roundwood and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edging, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulpwood chips or other products.

Tree biomass.—The total aboveground weight (including the bark) of all trees from 1 to 5 inches in d.b.h., and the total aboveground weight (including the bark) from a 1-foot stump for trees more than 5 inches in diameter.

Tree size class.—A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings, and seedlings.

Unproductive forest land.—Forest land incapable of producing 20 cubic feet per acre of annual growth or of yielding crops of industrial wood under natural conditions because of adverse site conditions. (Note: Adverse conditions include shallow soil, dry climate, poor drainage, high elevation, steepness, and rockiness).

Upper stem portion.—That part of the bole of sawtimber trees above the saw log top to a minimum top diameter of 4 inches outside bark or to the point where the central stem breaks into limbs.

Urban and other areas.—Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; schoolyards, cemeteries, roads; railroads; airports; beaches; powerlines; and other rights-of-way; or other nonforest land not included in any other specified land use class.

Water.—(a) *Bureau of the Census.*—Permanent inland water surfaces, such as lakes, reservoirs, and ponds at least 40 acres in area; and streams, sloughs, estuaries, and canals at least one-eighth of a statute mile wide.

(b) Noncensus.—Permanent inland water surfaces, such as lakes, reservoirs, and ponds from 1 to 39.9 acres in area; and streams, sloughs, estuaries, and canals from 120 feet to one-eighth of a statute mile wide.

Wooded pasture.—Improved pasture with more than 16.7 percent stocking in live trees but less than 25 percent stocking in growing-stock trees. Area is currently improved for grazing or there is other evidence of grazing.

Wooded strip.—An acre or more of natural continuous forest land that would otherwise meet survey standards for commercial forest land except that it is less than 120 feet wide.

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Table 1.--Area of land by land class, Northeast Unit, Wisconsin, 1968 and 1983

(In thousand acres)

Land class	1968	1983
Forest land		
Commercial forest land		
Jack pine	130.7	81.7
Red pine	122.2	157.8
White pine	64.1	81.1
Balsam fir	280.5	187.9
White spruce	29.5	19.8
Black spruce	132.1	147.5
Northern white-cedar	166.8	186.0
Tamarack	68.6	63.0
Oak-hickory	212.2	149.3
Elm-ash-soft maple	261.4	235.9
Maple-birch	1,189.1	1,280.2
Aspen	1,196.0	1,026.7
Paper birch	154.6	191.5
Nonstocked	54.2	20.1
Subtotal	4,062.0	3,828.5
Noncommercial forest land		
Unproductive	151.2	140.8
Productive-reserved	1.8	52.0
Subtotal	153.0	192.8
Total	4,215.0	4,021.3
Nonforest land		
Cropland	751.4	748.6
Pasture and range	86.6	209.3
Other	628.8	721.0
Total	1,466.8	1,678.9
Total land	5,681.8	5,700.2
Water (Bureau of the Census)	261.3[1/]	262.8[2/]
Total land and water	5,943.1[1/]	5,963.0[2/]

[1/] U.S. Department of Commerce, Bureau of Census, 1960.

[2/] U.S. Department of Commerce, Bureau of Census, 1980.

Table 2.--Area of land by land use class and county, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Forest land											
Commercial forest	3,828.5	244.0	492.7	374.5	393.8	213.1	639.7	347.1	497.1	255.2	371.3
Unproductive forest	140.8	3.5	34.8	17.2	16.7	--	16.7	6.6	34.0	4.0	7.3
Productive reserved	52.0	6.7	16.4	--	0.7	--	4.6	3.7	--	--	19.9
Total	4,021.3	254.2	543.9	391.7	411.2	213.1	661.0	357.4	531.1	259.2	398.5
Nonforest land											
Nonforest with trees											
Cropland with trees	3.9	--	--	--	1.3	--	1.3	--	--	1.3	--
Improved pasture with trees	34.7	2.2	2.0	3.2	1.2	--	3.1	6.8	2.8	12.1	1.3
Wooded strips	5.8	--	--	--	1.8	--	--	1.9	--	2.1	--
Idle farmland with trees	21.5	--	--	--	--	--	5.3	9.3	--	4.0	2.9
Marsh with trees	40.1	--	1.8	4.6	5.4	1.8	9.0	7.4	6.8	--	3.3
Urban and other with trees	56.4	1.8	--	0.7	9.1	--	11.1	--	18.3	3.3	12.1
Windbreaks	5.0	--	--	--	--	--	3.1	1.9	--	--	--
Subtotal	167.4	4.0	3.8	8.5	18.8	1.8	32.9	27.3	27.9	22.8	19.6
Nonforest without trees											
Cropland without trees	744.7	22.2	35.7	90.8	60.7	--	104.4	176.9	53.2	200.8	--
Improved pasture without trees	174.6	4.3	5.4	23.4	37.2	--	24.2	24.3	15.8	36.2	3.8
Idle farmland without trees	55.8	2.1	8.1	5.3	2.1	--	15.0	11.3	--	8.1	3.8
Marsh without trees	215.2	1.8	8.1	7.3	12.2	14.8	14.7	11.2	62.0	10.1	73.0
Other farm-farmstead	36.4	2.2	--	5.4	--	--	10.9	1.8	--	16.1	--
Urban and other	244.9	19.1	40.9	19.8	18.5	--	22.0	29.0	28.3	18.3	49.0
Noncensus water	39.9	0.9	1.2	6.8	6.4	--	8.0	2.2	4.9	2.4	7.1
Subtotal	1,511.5	52.6	99.4	158.8	137.1	14.8	199.2	256.7	164.2	292.0	136.7
Total	1,678.9	56.6	103.2	167.3	155.9	16.6	232.1	284.0	192.1	314.8	156.3
Total land	5,700.2	310.8	647.1	559.0	567.1	229.7	893.1	641.4	723.2	574.0	554.8
Water (Bureau of the Census)[1/]	262.8	7.4	22.8	9.3	14.2	4.0	23.0	9.6	68.1	8.1	96.3
Total land and water[1/]	5,963.0	318.2	669.9	568.3	581.3	233.7	916.1	651.0	791.3	582.1	651.1

[1/] U.S. Department of Commerce, Bureau of Census, 1980.

Table 3.--Area of commercial forest land by ownership class and county, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
National Forest	548.8	67.5	274.7	30.3	--	--	--	126.8	7.9	--	41.6
Miscellaneous federal	3.9	--	--	1.9	--	--	--	--	--	2.0	--
State	193.7	7.2	15.1	17.2	3.8	--	3.6	--	54.4	6.0	86.4
County and municipal	646.9	39.6	7.3	114.2	81.2	--	255.4	44.3	57.7	8.0	39.2
Indian	254.5	--	7.3	--	--	213.1	--	--	--	18.0	16.1
Forest industry	485.3	50.4	77.1	47.5	59.2	--	30.6	--	180.0	26.0	14.5
Farmer	381.6	9.0	5.6	55.1	57.1	--	52.7	74.4	8.5	119.2	--
Misc. private-corporation	163.1	12.7	11.1	5.7	5.5	--	36.1	7.6	39.1	4.0	41.3
Misc. private-individual	1,150.7	57.6	94.5	102.6	187.0	--	261.3	94.0	149.5	72.0	132.2
All owners	3,828.5	244.0	492.7	374.5	393.8	213.1	639.7	347.1	497.1	255.2	371.3

Table 4.--Area of commercial forest land by ownership class and site class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
National Forest	548.8	--	--	47.3	165.0	239.7	96.8
Miscellaneous federal	3.9	--	--	--	1.9	2.0	--
State	193.7	--	--	3.4	27.1	86.8	76.4
County and municipal	646.9	--	--	10.9	140.7	288.0	207.3
Indian	254.5	--	--	7.2	52.1	133.7	61.5
Forest industry	485.3	--	--	16.1	109.0	219.3	140.9
Farmer	381.6	--	--	11.1	86.9	135.3	148.3
Misc. private-corporation	163.1	--	--	5.3	29.0	76.3	52.5
Misc. private-individual	1,150.7	--	2.0	42.1	251.3	503.1	352.2
All owners	3,828.5	--	2.0	143.4	863.0	1,684.2	1,135.9

Table 5.--Area of commercial forest land by ownership class and stand-volume class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Stand-volume class (board feet[1/])		
		Less than 1,500	1,500 to 5,000	5,000+
National Forest	548.8	192.7	276.2	79.9
Miscellaneous federal	3.9	1.9	2.0	--
State	193.7	84.7	74.4	34.6
County and municipal	646.9	368.5	235.8	42.6
Indian	254.5	42.9	83.0	128.6
Forest industry	485.3	183.5	193.2	108.6
Farmer	381.6	159.6	153.7	68.3
Misc. private-corporation	163.1	71.9	73.5	17.7
Misc. private-individual	1,150.7	532.7	462.1	155.9
All owners	3,828.5	1,638.4	1,553.9	636.2

[1/] International 1/4-inch rule.

Table 6.--Area of privately owned commercial forest land by ownership class, owner tenure, and size of holding, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Ownership class and owner tenure class	All sizes	Size of holding (acres)								
		1-4	5-10	11-20	21-50	51-100	101-500	501-2,500	2,501-5,000	5001+
Forest industry										
1-4 years	36.9	--	--	--	--	--	--	11.2	--	25.7
5-9 years	53.8	--	--	--	--	1.7	--	1.6	1.7	48.8
10-19 years	118.0	--	--	--	--	--	--	1.9	--	116.1
20+ years	276.6	--	--	--	--	--	--	1.7	--	274.9
All classes	485.3	--	--	--	--	1.7	--	16.4	1.7	465.5
Farmer										
1-4 years	75.4	--	--	3.9	19.1	22.3	30.1	--	--	--
5-9 years	54.6	--	3.8	3.7	5.7	24.6	14.8	2.0	--	--
10-19 years	139.8	--	1.8	5.8	24.0	34.4	66.6	5.4	1.8	--
20+ years	111.8	--	-	3.9	27.1	35.9	41.3	1.9	1.7	--
All classes	381.6	--	5.6	17.3	75.9	117.2	152.8	9.3	3.5	--
Misc. priv.-corporation										
1-4 years	19.4	--	--	--	7.0	1.7	8.8	1.9	--	--
5-9 years	17.1	--	--	--	5.2	1.7	1.8	8.4	--	--
10-19 years	32.1	--	--	--	3.6	3.4	8.8	10.8	3.6	1.9
20+ years	94.5	--	--	3.9	1.8	10.9	10.5	41.0	--	26.4
All classes	163.1	--	--	3.9	17.6	17.7	29.9	62.1	3.6	28.3
Misc. priv.-individual										
1-4 years	261.8	6.9	15.8	10.3	105.5	58.4	56.1	6.9	--	1.9
5-9 years	264.1	6.8	10.3	12.3	88.5	79.0	56.9	10.3	--	--
10-19 years	341.6	10.4	13.1	10.7	116.7	68.6	101.2	17.5	3.4	--
20+ years	283.2	5.3	6.8	7.1	83.2	76.3	88.1	16.4	--	--
All classes	1,150.7	29.4	46.0	40.4	393.9	282.3	302.3	51.1	3.4	1.9
All private owners										
1-4 years	393.5	6.9	15.8	14.2	131.6	82.4	95.0	20.0	--	27.6
5-9 years	389.6	6.8	14.1	16.0	99.4	107.0	73.5	22.3	1.7	48.8
10-19 years	631.5	10.4	14.9	16.5	144.3	106.4	176.6	35.6	8.8	118.0
20+ years	766.1	5.3	6.8	14.9	112.1	123.1	139.9	61.0	1.7	301.3
All classes	2,180.7	29.4	51.6	61.6	487.4	418.9	485.0	138.9	12.2	495.7

Table 7.--Area of commercial forest land by forest type, stand-size class, and ownership class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All owners	Ownership class								
		National[1/] Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Jack pine										
Sawtimber	27.1	0.7	--	1.6	14.2	1.8	1.7	--	--	7.1
Poletimber	36.7	9.7	--	3.3	11.4	1.6	1.7	1.8	--	7.2
Sapling & seedling	17.9	0.5	--	5.1	3.4	--	--	--	1.7	7.2
All stands	81.7	10.9	--	10.0	29.0	3.4	3.4	1.8	1.7	21.5
Red pine										
Sawtimber	79.5	18.4	--	10.2	22.4	1.6	1.7	--	--	25.2
Poletimber	56.7	17.5	--	8.7	9.5	1.8	8.9	--	3.5	6.8
Sapling & seedling	21.6	10.5	--	1.7	2.0	--	7.0	--	--	0.4
All stands	157.8	46.4	--	20.6	33.9	3.4	17.6	--	3.5	32.4
White pine										
Sawtimber	58.7	5.9	--	1.7	8.5	12.2	1.7	9.2	5.1	14.4
Poletimber	15.6	2.0	--	1.6	--	1.8	1.7	--	5.3	3.2
Sapling & seedling	6.8	--	--	--	--	--	3.4	1.8	--	1.6
All stands	81.1	7.9	--	3.3	8.5	14.0	6.8	11.0	10.4	19.2
Balsam fir										
Sawtimber	34.9	2.3	--	1.9	1.8	--	10.4	--	--	18.5
Poletimber	91.7	22.7	--	3.4	20.5	--	3.5	1.9	5.1	34.6
Sapling & seedling	61.3	3.7	--	5.4	9.1	--	10.3	5.7	3.5	23.6
All stands	187.9	28.7	--	10.7	31.4	--	24.2	7.6	8.6	76.7
White spruce										
Sawtimber	9.3	9.3	--	--	--	--	--	--	--	--
Poletimber	5.5	--	--	--	--	--	1.7	--	--	3.8
Sapling & seedling	5.0	3.2	--	--	1.8	--	--	--	--	--
All stands	19.8	12.5	--	--	1.8	--	1.7	--	--	3.8
Black spruce										
Sawtimber	5.5	--	--	1.7	3.8	--	--	--	--	--
Poletimber	54.2	15.7	--	8.4	8.9	3.6	5.1	2.0	--	10.5
Sapling & seedling	87.8	2.0	--	14.0	19.5	--	18.7	7.8	3.4	22.4
All stands	147.5	17.7	--	24.1	32.2	3.6	23.8	9.8	3.4	32.9
Northern white-cedar										
Sawtimber	44.2	4.2	--	1.9	3.6	3.5	14.3	7.8	--	8.9
Poletimber	114.6	27.8	--	3.7	12.7	10.8	6.8	13.4	3.5	35.9
Sapling & seedling	27.2	3.0	--	--	5.5	1.7	1.7	8.0	--	7.3
All stands	186.0	35.0	--	5.6	21.8	16.0	22.8	29.2	3.5	52.1

(Table 7 continued on next page)

[1/] Northern white-cedar and tamarack forest types are classified as mixed swamp conifers in the Nicolet National Forest Land and Resource Management Plan. Other minor differences exist between these figures and those appearing in the Land and Resource Management Plan due to differences in sampling methods and intensities.

(Table 7 continued)

Forest type and stand-size class	All owners	Ownership class: National Forest [1]	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Tamarack										
Sawtimber	1.7	--	--	--	--	--	1.7	--	--	--
Poletimber	27.5	4.0	--	1.9	--	--	3.6	1.8	1.7	14.5
Sapling & seedling	33.8	--	--	8.5	3.9	1.6	--	5.5	1.8	12.5
All stands	63.0	4.0	--	10.4	3.9	1.6	5.3	7.3	3.5	27.0
Oak-hickory										
Sawtimber	61.0	3.0	--	3.4	1.8	16.1	6.0	9.0	7.5	14.2
Poletimber	59.4	7.7	--	3.3	18.3	1.7	1.9	5.6	3.5	17.4
Sapling & seedling	28.9	--	--	--	12.6	1.8	--	1.8	1.8	10.9
All stands	149.3	10.7	--	6.7	32.7	19.6	7.9	16.4	12.8	42.5
Elm-ash-soft maple										
Sawtimber	71.5	0.4	--	--	12.9	9.2	1.8	23.1	--	24.1
Poletimber	113.3	2.2	--	1.7	21.9	1.8	8.9	28.7	3.6	44.5
Sapling & seedling	51.1	0.3	--	1.7	7.5	--	3.6	9.6	1.9	26.5
All stands	235.9	2.9	--	3.4	42.3	11.0	14.3	61.4	5.5	95.1
Maple-birch										
Sawtimber	510.4	62.3	--	24.2	12.5	103.9	108.0	72.7	8.5	118.3
Poletimber	626.7	161.7	--	10.3	95.7	33.5	97.0	45.9	29.1	153.5
Sapling & seedling	143.1	1.3	--	1.6	20.4	--	21.6	27.8	3.4	67.0
All stands	1,280.2	225.3	--	36.1	128.6	137.4	226.6	146.4	41.0	338.8
Aspen										
Sawtimber	127.1	13.1	--	8.5	17.8	3.5	15.8	7.4	3.6	57.4
Poletimber	483.4	64.0	2.0	15.4	116.0	25.0	26.6	42.9	23.2	168.3
Sapling & seedling	416.2	58.0	1.9	25.7	109.7	8.8	67.6	22.1	25.1	97.3
All stands	1,026.7	135.1	3.9	49.6	243.5	37.3	110.0	72.4	51.9	323.0
Paper birch										
Sawtimber	21.9	0.6	--	1.6	--	--	--	3.6	--	16.1
Poletimber	139.0	11.1	--	11.6	24.9	3.4	17.5	5.4	15.5	49.6
Sapling & seedling	30.6	--	--	--	10.6	--	--	5.5	--	14.5
All stands	191.5	11.7	--	13.2	35.5	3.4	17.5	14.5	15.5	80.2
Exotic										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--
Nonstocked	20.1	--	--	--	1.8	3.8	3.4	3.8	1.8	5.5
All types										
Sawtimber	1,052.8	120.2	--	56.7	99.3	151.8	163.1	132.8	24.7	304.2
Poletimber	1,824.3	346.1	2.0	73.3	339.8	85.0	184.9	149.4	94.0	549.8
Sapling & seedling	931.3	82.5	1.9	63.7	206.0	13.9	133.9	95.6	42.6	291.2
Nonstocked	20.1	--	--	--	1.8	3.8	3.4	3.8	1.8	5.5
All stands	3,828.5	548.8	3.9	193.7	646.9	254.5	485.3	381.6	163.1	1,150.7

[1] Northern white-cedar and tamarack forest types are classified as mixed swamp conifers in the Nicolet National Forest Land and Resource Management Plan. Other minor differences exist between these figures and those appearing in the Land and Resource Management Plan due to differences in sampling methods and intensities.

Table 8.--Area of commercial forest land by forest type and county, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Jack pine	81.7	--	--	3.9	5.6	1.8	25.5	10.8	11.3	2.0	20.8
Red pine	157.8	6.8	20.1	6.4	14.6	1.8	27.1	24.2	26.3	8.0	22.5
White pine	81.1	3.7	3.3	--	3.6	10.8	7.2	7.4	15.7	4.0	25.4
Balsam fir	187.9	10.9	38.8	33.2	29.8	--	16.5	5.5	34.0	4.0	15.2
White spruce	19.8	5.9	8.5	--	1.8	--	1.9	--	1.7	--	--
Black spruce	147.5	5.2	23.5	11.4	16.6	3.6	5.5	--	52.6	6.0	23.1
Northern white-cedar	186.0	6.7	31.5	13.4	--	10.6	43.7	33.6	22.0	18.0	6.5
Tamarack	63.0	4.0	5.6	11.5	5.6	--	3.6	1.8	18.7	4.0	8.2
Oak-hickory	149.3	7.2	--	--	3.7	17.9	61.6	21.7	8.5	14.0	14.7
Elm-ash-soft maple	235.9	1.8	10.4	17.1	33.5	9.0	52.6	38.9	13.6	54.0	5.0
Maple-birch	1,280.2	97.2	233.0	183.2	127.8	121.9	148.3	84.9	74.7	111.3	97.9
Aspen	1,026.7	80.2	100.7	86.8	125.4	32.1	211.8	92.5	167.0	25.9	104.3
Paper birch	191.5	10.8	17.3	7.6	23.9	1.8	32.6	20.2	47.6	2.0	27.7
Exotic	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	20.1	3.6	--	--	1.9	1.8	1.8	5.6	3.4	2.0	--
All types	3,828.5	244.0	492.7	374.5	393.8	213.1	639.7	347.1	497.1	255.2	371.3

Table 9.--Area of commercial forest land by county and stand-size class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

County	All stands	Stand-size class			
		Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Florence	244.0	83.3	111.9	45.2	3.6
Forest	492.7	149.7	258.4	84.6	--
Langlade	374.5	85.8	215.8	72.9	--
Lincoln	393.8	61.1	195.8	135.0	1.9
Menominee	213.1	145.0	54.0	12.3	1.8
Marinette	639.7	136.0	309.5	192.4	1.8
Oconto	347.1	84.5	184.9	72.1	5.6
Oneida	497.1	93.9	211.3	188.5	3.4
Shawano	255.2	98.0	115.9	39.3	2.0
Vilas	371.3	115.5	166.8	89.0	--
All counties	3,828.5	1,052.8	1,824.3	931.3	20.1

Table 10.--Area of commercial forest land by forest type, stand-size class, and site class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Jack pine							
Sawtimber	27.1	--	--	--	--	21.8	5.3
Poletimber	36.7	--	--	--	7.8	14.7	14.2
Sapling & seedling	17.9	--	--	--	1.7	4.0	12.2
All stands	81.7	--	--	--	9.5	40.5	31.7
Red pine							
Sawtimber	79.5	--	--	26.9	25.3	25.3	2.0
Poletimber	56.7	--	--	18.5	27.6	9.0	1.6
Sapling & seedling	21.6	--	--	--	12.9	8.7	--
All stands	157.8	--	--	45.4	65.8	43.0	3.6
White pine							
Sawtimber	58.7	--	--	10.4	26.9	17.8	3.6
Poletimber	15.6	--	--	7.0	1.7	3.5	3.4
Sapling & seedling	6.8	--	--	1.8	1.7	3.3	--
All stands	81.1	--	--	19.2	30.3	24.6	7.0
Balsam fir							
Sawtimber	34.9	--	--	13.9	13.6	5.5	1.9
Poletimber	91.7	--	--	31.9	30.8	16.0	13.0
Sapling & seedling	61.3	--	2.0	12.9	21.2	7.5	17.7
All stands	187.9	--	2.0	58.7	65.6	29.0	32.6
White spruce							
Sawtimber	9.3	--	--	--	2.7	6.6	--
Poletimber	5.5	--	--	--	--	5.5	--
Sapling & seedling	5.0	--	--	--	1.8	1.6	1.6
All stands	19.8	--	--	--	4.5	13.7	1.6
Black spruce							
Sawtimber	5.5	--	--	--	--	--	5.5
Poletimber	54.2	--	--	--	3.3	9.6	41.3
Sapling & seedling	87.8	--	--	--	6.9	5.6	75.3
All stands	147.5	--	--	--	10.2	15.2	122.1
Northern white-cedar							
Sawtimber	44.2	--	--	--	1.9	9.0	33.3
Poletimber	114.6	--	--	--	--	27.6	87.0
Sapling & seedling	27.2	--	--	--	--	3.7	23.5
All stands	186.0	--	--	--	1.9	40.3	143.8

(Table 10 continued on next page)

(Table 10 continued)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Tamarack							
Sawtimber	1.7	--	--	--	--	--	1.7
Poletimber	27.5	--	--	--	--	12.7	14.8
Sapling & seedling	33.8	--	--	--	--	14.3	19.5
All stands	63.0	--	--	--	--	27.0	36.0
Oak-hickory							
Sawtimber	61.0	--	--	--	20.2	28.2	12.6
Poletimber	59.4	--	--	--	16.4	35.9	7.1
Sapling & seedling	28.9	--	--	--	10.9	12.6	5.4
All stands	149.3	--	--	--	47.5	76.7	25.1
Elm-ash-soft maple							
Sawtimber	71.5	--	--	--	5.6	16.8	49.1
Poletimber	113.3	--	--	--	10.9	30.2	72.2
Sapling & seedling	51.1	--	--	--	1.8	7.5	41.8
All stands	235.9	--	--	--	18.3	54.5	163.1
Maple-birch							
Sawtimber	510.4	--	--	3.8	86.0	283.2	137.4
Poletimber	626.7	--	--	1.9	121.0	368.2	135.6
Sapling & seedling	143.1	--	--	--	14.6	61.0	67.5
All stands	1,280.2	--	--	5.7	221.6	712.4	340.5
Aspen							
Sawtimber	127.1	--	--	--	63.6	59.8	3.7
Poletimber	483.4	--	--	9.3	203.5	214.4	56.2
Sapling & seedling	416.2	--	--	3.4	111.6	231.9	69.3
All stands	1,026.7	--	--	12.7	378.7	506.1	129.2
Paper birch							
Sawtimber	21.9	--	--	--	3.6	12.7	5.6
Poletimber	139.0	--	--	--	1.8	70.5	66.7
Sapling & seedling	30.6	--	--	--	2.0	16.1	12.5
All stands	191.5	--	--	--	7.4	99.3	84.8
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	20.1	--	--	1.7	1.7	1.9	14.8
All types							
Sawtimber	1,052.8	--	--	55.0	249.4	486.7	261.7
Poletimber	1,824.3	--	--	68.6	424.8	817.8	513.1
Sapling & seedling	931.3	--	2.0	18.1	187.1	377.8	346.3
Nonstocked	20.1	--	--	1.7	1.7	1.9	14.8
All stands	3,828.5	--	2.0	143.4	863.0	1,684.2	1,135.9

Table 11.--Area of commercial forest land by forest type and stand-age class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	81.7	3.4	7.5	10.7	22.7	12.3	20.0	1.6	3.5	--	--	--	--	--
Red pine	157.8	10.7	20.1	27.4	50.4	25.4	3.3	5.3	3.2	3.4	5.4	3.2	--	--
White pine	81.1	5.0	1.8	6.8	6.7	5.3	12.0	1.9	12.3	10.9	2.0	3.6	5.8	7.0
Balsam fir	187.9	24.6	15.3	19.6	26.6	19.7	41.7	16.6	10.7	4.0	1.7	3.7	1.8	1.9
White spruce	19.8	1.8	6.8	--	--	2.7	8.5	--	--	--	--	--	--	--
Black spruce	147.5	14.4	20.6	38.7	10.6	10.2	10.4	12.5	19.3	5.3	3.6	--	1.9	--
Northern white-cedar	186.0	6.5	7.3	13.2	1.6	21.9	12.8	19.0	12.3	16.4	34.4	17.5	12.4	10.7
Tamarack	63.0	6.8	6.8	18.4	1.8	--	7.0	13.2	3.6	1.8	1.7	1.9	--	--
Oak-hickory	149.3	23.5	3.6	3.6	3.7	22.3	35.6	15.6	18.4	7.0	6.8	5.6	1.8	1.8
Elm-ash-soft maple	235.9	17.0	21.0	16.2	24.4	29.9	18.3	44.4	22.2	18.7	10.9	3.8	5.5	3.6
Maple-birch	1,280.2	61.7	59.3	49.7	79.0	228.4	226.5	158.2	69.8	70.6	45.1	82.9	62.3	86.7
Aspen	1,026.7	249.6	140.5	72.6	130.6	196.9	147.4	57.9	14.4	16.8	--	--	--	--
Paper birch	191.5	8.6	13.0	19.5	14.3	47.0	50.5	30.9	7.4	--	0.3	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	20.1	20.1	--	--	--	--	--	--	--	--	--	--	--	--
All types	3,828.5	453.7	323.6	296.4	372.4	622.0	594.0	377.1	197.1	154.9	111.9	122.2	91.5	111.7

Table 12.--Area of commercial forest land by forest type and site-index class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All classes	Site-index class (feet)								
		11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+
Jack pine	81.7	--	1.7	1.6	8.8	23.0	25.7	17.5	3.4	--
Red pine	157.8	--	--	--	3.6	29.3	53.7	51.3	19.9	--
White pine	81.1	--	--	1.7	10.3	19.6	26.7	12.2	10.6	--
Balsam fir	187.9	--	5.3	27.3	44.2	50.4	47.7	11.0	2.0	--
White spruce	19.8	--	--	--	5.4	8.3	--	6.1	--	--
Black spruce	147.5	--	38.3	46.6	37.2	15.2	6.8	3.4	--	--
Northern white-cedar	186.0	3.4	65.9	58.2	24.9	22.7	9.0	--	1.9	--
Tamarack	63.0	--	7.1	18.1	10.8	25.3	1.7	--	--	--
Oak-hickory	149.3	--	--	--	5.3	34.0	39.2	41.7	23.4	5.7
Elm-ash-soft maple	235.9	--	--	24.1	39.5	77.1	58.3	18.6	18.3	--
Maple-birch	1,280.2	--	--	11.3	73.3	255.9	446.1	362.1	114.6	16.9
Aspen	1,026.7	--	--	9.3	58.2	178.7	305.0	343.3	119.5	12.7
Paper birch	191.5	--	--	--	12.5	44.4	77.2	50.0	7.4	--
Exotic	--	--	--	--	--	--	--	--	--	--
Nonstocked	20.1	--	2.0	1.8	5.4	5.6	1.9	3.4	--	--
All types	3,828.5	3.4	120.3	200.0	339.4	789.5	1,099.0	920.6	321.0	35.3

Table 13.--Area of commercial forest land by forest type, stand-size class, and basal-area class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	27.1	--	--	--	3.8	1.8	3.6	1.7	1.6	3.7	5.0	4.1	--	1.8	--
Poletimber	36.7	--	--	--	--	3.5	1.8	3.8	8.9	2.0	3.5	5.0	8.2	--	--
Sapling & seedling	17.9	1.8	--	1.8	3.4	4.1	--	3.4	3.4	--	--	--	--	--	--
All stands	81.7	1.8	--	1.8	7.2	9.4	5.4	8.9	13.9	5.7	8.5	9.1	8.2	1.8	--
Red pine															
Sawtimber	79.5	--	--	--	1.8	--	--	--	5.0	3.5	5.3	26.3	27.1	5.3	5.2
Poletimber	56.7	--	--	--	--	3.4	--	--	1.8	1.7	1.7	21.6	13.6	5.3	7.6
Sapling & seedling	21.6	7.1	1.8	2.5	1.8	1.7	3.4	--	--	1.7	1.6	--	--	--	--
All stands	157.8	7.1	1.8	2.5	3.6	5.1	3.4	--	6.8	6.9	8.6	47.9	40.7	10.6	12.8
White pine															
Sawtimber	58.7	--	--	1.9	--	1.7	3.4	1.7	1.6	5.0	7.3	12.2	7.8	7.2	8.9
Poletimber	15.6	--	--	--	--	1.7	--	--	3.4	1.8	3.4	1.6	3.7	--	--
Sapling & seedling	6.8	--	--	--	--	--	3.3	--	3.5	--	--	--	--	--	--
All stands	81.1	--	--	1.9	--	3.4	6.7	1.7	8.5	6.8	10.7	13.8	11.5	7.2	8.9
Balsam fir															
Sawtimber	34.9	--	--	--	--	2.1	3.4	3.6	2.9	3.6	4.9	5.3	5.5	--	3.6
Poletimber	91.7	--	--	--	--	3.5	--	1.7	5.7	7.2	1.9	23.3	32.2	7.3	8.9
Sapling & seedling	61.3	7.4	3.4	5.8	5.5	7.0	9.2	8.9	5.2	--	3.7	3.3	1.9	--	--
All stands	187.9	7.4	3.4	5.8	5.5	12.6	12.6	14.2	13.8	10.8	10.5	31.9	39.6	7.3	12.5
White spruce															
Sawtimber	9.3	--	--	--	--	--	--	2.7	--	--	--	--	--	6.6	--
Poletimber	5.5	--	--	--	--	--	--	--	--	3.8	--	1.7	--	--	--
Sapling & seedling	5.0	--	--	1.8	--	1.6	1.6	--	--	--	--	--	--	--	--
All stands	19.8	--	--	1.8	--	1.6	1.6	2.7	--	3.8	--	1.7	--	6.6	--
Black spruce															
Sawtimber	5.5	--	1.9	--	--	--	--	3.6	--	--	--	--	--	--	--
Poletimber	54.2	--	--	3.6	--	--	3.5	5.7	1.8	7.0	15.8	5.9	9.1	1.8	--
Sapling & seedling	87.8	5.5	5.4	23.0	3.7	12.3	5.4	8.4	13.8	5.1	1.7	3.5	--	--	--
All stands	147.5	5.5	7.3	26.6	3.7	12.3	8.9	17.7	15.6	12.1	17.5	9.4	9.1	1.8	--
Northern white-cedar															
Sawtimber	44.2	--	--	--	--	--	--	1.9	--	5.7	--	7.6	5.2	12.7	11.1
Poletimber	114.6	--	--	--	--	--	--	--	7.1	1.8	1.6	9.5	16.5	38.7	39.4
Sapling & seedling	27.2	1.8	2.2	3.7	0.9	5.3	--	--	5.7	--	--	4.0	--	3.6	--
All stands	186.0	1.8	2.2	3.7	0.9	5.3	--	1.9	12.8	7.5	1.6	21.1	21.7	55.0	50.5

(Table 13 continued on next page)

(Table 13 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	1.7	--	--	--	--	--	1.7	--	--	--	--	--	--	--	--
Poletimber	27.5	--	1.9	1.8	--	3.6	3.6	3.7	1.9	5.1	2.0	3.9	--	--	--
Sapling & seedling	33.8	10.3	5.2	--	3.5	3.5	3.8	--	5.6	--	1.9	--	--	--	--
All stands	63.0	10.3	7.1	1.8	3.5	7.1	9.1	3.7	7.5	5.1	3.9	3.9	--	--	--
Oak-hickory															
Sawtimber	61.0	--	--	--	5.4	--	--	2.0	9.0	1.8	3.5	12.2	19.9	5.5	1.7
Poletimber	59.4	--	--	1.8	--	1.9	1.9	1.8	5.7	3.6	6.9	14.4	18.1	3.3	--
Sapling & seedling	28.9	3.7	3.6	3.6	1.8	5.4	9.0	--	1.8	--	--	--	--	--	--
All stands	149.3	3.7	3.6	5.4	7.2	7.3	10.9	3.8	16.5	5.4	10.4	26.6	38.0	8.8	1.7
Elm-ash-soft maple															
Sawtimber	71.5	--	--	2.0	1.9	2.0	2.0	5.8	5.7	7.8	3.8	9.5	16.7	8.9	5.4
Poletimber	113.3	--	--	--	3.6	5.6	7.3	11.4	13.6	12.7	3.6	16.2	35.8	3.5	--
Sapling & seedling	51.1	7.7	5.8	7.5	5.8	7.5	5.5	3.8	3.5	--	3.7	0.3	--	--	--
All stands	235.9	7.7	5.8	9.5	11.3	15.1	14.8	21.0	22.8	20.5	11.1	26.0	52.5	12.4	5.4
Maple-birch															
Sawtimber	510.4	--	--	--	--	9.4	9.4	20.5	24.9	44.1	34.6	121.5	173.1	58.9	14.0
Poletimber	626.7	--	--	--	3.7	7.5	19.9	27.8	52.1	117.2	49.9	148.1	135.1	50.6	14.8
Sapling & seedling	143.1	11.1	14.1	14.4	9.4	13.5	22.1	9.2	18.2	5.6	5.4	11.0	5.5	3.6	--
All stands	1,280.2	11.1	14.1	14.4	13.1	30.4	51.4	57.5	95.2	166.9	89.9	280.6	313.7	113.1	28.8
Aspen															
Sawtimber	127.1	--	--	3.4	3.7	3.6	12.4	7.5	7.0	19.0	14.1	18.1	25.3	3.5	9.5
Poletimber	483.4	--	1.9	9.0	1.9	38.9	35.4	53.9	52.3	60.7	48.1	70.9	81.1	21.2	8.1
Sapling & seedling	416.2	62.9	47.0	64.7	40.0	53.4	57.5	24.2	31.0	15.7	14.3	3.7	--	1.8	--
All stands	1,026.7	62.9	48.9	77.1	45.6	95.9	105.3	85.6	90.3	95.4	76.5	92.7	106.4	26.5	17.6
Paper birch															
Sawtimber	21.9	--	--	1.8	--	3.7	--	--	--	1.7	1.8	7.1	2.1	3.7	--
Poletimber	139.0	--	--	--	1.6	3.7	3.5	5.3	7.0	15.5	5.3	35.4	39.3	20.7	1.7
Sapling & seedling	30.6	3.5	1.9	1.6	--	7.4	3.6	1.8	3.6	1.8	1.9	1.8	1.7	--	--
All stands	191.5	3.5	1.9	3.4	1.6	14.8	7.1	7.1	10.6	19.0	9.0	44.3	43.1	24.4	1.7
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	20.1	16.5	--	--	1.8	1.8	--	--	--	--	--	--	--	--	--
All types															
Sawtimber	1,052.8	--	1.9	9.1	16.6	24.3	35.9	51.0	57.7	95.9	80.3	223.9	282.7	114.1	59.4
Poletimber	1,824.3	--	3.8	16.2	10.8	73.3	76.9	115.1	161.3	240.1	143.7	357.5	392.7	152.4	80.5
Sapling & seedling	931.3	122.8	90.4	130.4	75.8	122.7	124.4	59.7	95.3	29.9	34.2	27.6	9.1	9.0	--
Nonstocked	20.1	16.5	--	--	1.8	1.8	--	--	--	--	--	--	--	--	--
All stands	3,828.5	139.3	96.1	155.7	105.0	222.1	237.2	225.8	314.3	365.9	258.2	609.0	684.5	275.5	139.9

Table 14.--Area of commercial forest land by stocking class of growing-stock trees and stand-size class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Stocking class (percent)	All stands	Stand-size class			
		Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Less than 16.7	20.1	--	--	--	20.1
16.7 to 60.9	394.9	115.9	127.6	151.4	--
61.0 to 100.9	1,334.1	351.7	753.0	229.4	--
101.0 to 133.9	1,623.5	452.8	813.0	357.7	--
134.0+	455.9	132.4	130.7	192.8	--
All classes	3,828.5	1,052.8	1,824.3	931.3	20.1

Table 15.--Area of commercial forest land in plantations by forest type and stand-age class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years)						
		1-10	11-20	21-30	31-40	41-50	51-60	61+
Jack pine	22.4	--	2.3	3.5	10.8	--	5.8	--
Red pine	118.1	9.0	20.1	27.4	37.9	22.0	1.7	--
White pine	5.4	--	1.8	1.9	1.7	--	--	--
White spruce	16.2	1.8	5.1	--	--	2.7	6.6	--
All types	162.1	10.8	29.3	32.8	50.4	24.7	14.1	--

Table 16.--Area of commercial forest land with conifer understory by forest type and conifer understory species, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All species	Conifer understory species								
		White pine	Red pine	Jack pine	Balsam fir	White spruce	Black spruce	Hemlock	Northern white-cedar	Other softwoods
Jack pine	38.7	1.8	--	30.2	5.0	--	1.7	--	--	--
Red pine	76.4	8.6	10.7	1.7	45.4	8.4	1.6	--	--	--
White pine	49.4	21.0	1.7	--	24.9	--	--	1.8	--	--
Balsam fir	106.3	--	--	--	104.6	--	1.7	--	--	--
White spruce	5.0	--	--	--	--	5.0	--	--	--	--
Black spruce	97.1	--	--	--	33.1	--	60.5	--	--	3.5
Northern white-cedar	110.0	--	--	--	70.8	2.2	--	--	37.0	--
Tamarack	45.0	--	--	--	9.1	--	10.9	--	3.8	21.2
Oak-hickory	41.2	20.2	7.3	1.8	8.4	--	--	3.5	--	--
Elm-ash-soft maple	89.0	1.8	--	--	71.2	2.9	--	1.8	11.3	--
Maple-birch	348.8	40.8	8.7	1.7	226.7	10.7	1.9	52.9	3.6	1.8
Aspen	382.6	47.8	13.8	10.3	285.8	3.3	14.3	1.8	5.5	--
Paper birch	74.9	8.3	1.7	--	50.7	3.3	1.9	1.8	7.2	--
Exotic	--	--	--	--	--	--	--	--	--	--
Nonstocked	1.9	--	--	--	1.9	--	--	--	--	--
All types	1,466.3	150.3	43.9	45.7	937.6	35.8	94.5	63.6	68.4	26.5

Table 17.--Area of noncommercial forest land by ownership class, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All areas	Productive-reserved areas	Unproductive areas
National Forest	60.7	32.3[1/]	28.4
Miscellaneous federal	--	--	--
State	31.3	13.7	17.6
County and municipal	25.7	25.7	--
Indian	1.6	--	1.6
Forest industry	12.2	12.2	--
Farmer	6.1	6.1	--
Misc. private-corp.	3.6	3.6	--
Misc. private-indiv.	51.6	47.2	4.4
Total	192.8	140.8	52.0

[1/] Includes 16.8 thousand acres of productive-deferred areas.

Table 18.--Area of noncommercial forest land by forest type, Northeast Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All areas	Productive-reserved areas[1/]	Unproductive areas
Jack pine	2.0	2.0	--
Red pine	4.7	--	4.7
White pine	--	--	--
Balsam fir	7.1	7.1	--
White spruce	1.8	--	1.8
Black spruce	74.9	74.9	-
Northern white-cedar	16.2	13.4	2.8
Tamarack	10.5	10.5	-
Oak-hickory	23.5	22.2	1.3
Elm-ash-soft maple	16.2	--	16.2
Maple-birch	--	--	--
Aspen	27.9	3.4	24.5
Paper birch	0.7	--	0.7
Exotic	--	--	--
Nonstocked	7.3	7.3	--
All types	192.8	140.8	52.0

[1/] Includes 16.8 thousand acres of productive-deferred areas.

Table 19.--Number of all live trees on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand trees)

Species group	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods															
Jack pine	45,579	16,209	8,482	11,543	5,238	2,526	1,156	303	106	13	3	--	--	--	--
Red pine	59,612	12,464	13,521	15,326	9,220	4,500	2,387	730	651	434	199	133	47	--	--
White pine	37,962	16,295	8,187	4,479	2,819	1,771	1,320	953	617	604	313	215	313	74	2
White spruce	28,287	11,070	5,750	5,161	3,576	1,336	816	313	166	50	25	20	4	--	--
Black spruce	138,322	82,922	34,845	14,958	4,402	970	190	21	11	3	--	--	--	--	--
Balsam fir	300,894	182,415	61,684	36,212	13,055	5,295	1,662	323	238	10	--	--	--	--	--
Hemlock	33,160	11,413	6,153	3,959	3,330	2,621	1,891	1,446	811	719	362	214	224	17	--
Tamarack	47,222	25,291	13,078	5,915	2,298	421	188	27	--	4	--	--	--	--	--
Eastern redcedar	47	--	--	47	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	156,496	51,138	45,704	31,701	17,077	6,670	2,648	1,026	362	93	52	17	8	--	--
Other softwoods	74	--	--	--	--	19	42	--	13	--	--	--	--	--	--
Total	847,655	409,217	197,404	129,301	61,015	26,129	12,300	5,142	2,975	1,930	954	599	596	91	2
Hardwoods															
White oak	5,101	3,564	186	226	494	298	160	97	41	20	6	5	4	--	--
Select red oak	48,285	20,090	4,664	9,001	5,301	4,029	2,475	1,367	730	268	165	95	79	21	--
Other red oak	22,171	12,440	2,563	2,925	1,769	1,063	679	406	162	99	31	14	20	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	3,658	402	1,519	941	559	80	98	56	--	--	--	--	3	--	--
Basswood	60,736	12,841	11,256	15,038	10,734	5,848	2,821	1,126	482	269	140	90	81	9	1
Beech	7,610	5,616	1,087	119	257	88	91	104	92	67	42	16	27	4	--
Yellow birch	41,384	15,570	12,858	5,454	2,946	1,848	1,073	587	422	335	132	75	72	12	--
Hard maple	340,908	172,803	76,629	44,905	24,238	10,736	4,631	2,628	1,693	1,149	684	379	400	33	--
Soft maple	298,110	170,533	69,755	31,597	15,701	6,520	2,319	944	319	220	121	32	44	5	--
Elm	75,357	43,882	15,119	6,998	3,548	2,494	1,472	729	546	294	132	64	73	6	--
Black ash	90,831	52,788	22,691	8,408	4,613	1,357	589	217	102	45	6	13	2	--	--
White & green ash	34,236	21,829	3,631	3,272	2,594	1,323	819	503	157	79	24	3	2	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	694	186	186	--	23	--	76	201	11	5	--	--	--	4	2
Willow	1,252	564	535	--	87	--	10	26	9	16	--	--	5	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	12,632	8,247	742	1,865	781	381	273	225	60	18	21	16	2	1	--
Bigtooth aspen	85,400	56,344	8,799	6,678	6,438	4,010	2,018	803	215	77	9	9	--	--	--
Quaking aspen	571,092	423,875	60,756	32,281	25,748	16,998	7,581	2,661	853	235	78	22	4	--	--
Paper birch	154,634	54,064	37,645	29,223	21,096	8,730	2,770	797	236	46	21	3	2	1	--
Black cherry	78,045	59,720	8,882	5,324	2,498	876	343	365	26	4	7	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	304	--	--	--	69	40	84	60	31	18	--	--	2	--	--
Other hardwoods	1,544	1,536	--	--	--	--	8	--	--	--	--	--	--	--	--
Noncommercial species	122,954	101,581	15,115	4,959	994	182	115	8	--	--	--	--	--	--	--
Total	2,056,938	1,238,475	354,618	209,214	130,488	66,901	30,505	13,910	6,187	3,264	1,619	836	822	96	3
All species	2,904,593	1,647,692	552,022	338,515	191,503	93,030	42,805	19,052	9,162	5,194	2,573	1,435	1,418	187	5

Table 20.--Number of growing-stock trees on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand trees)

Species group	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods															
Jack pine	41,763	15,147	8,104	9,912	4,943	2,289	1,026	257	78	4	3	--	--	--	--
Red pine	58,889	12,464	13,356	14,911	9,129	4,470	2,387	724	646	429	199	127	47	--	--
White pine	36,533	16,128	8,020	4,032	2,592	1,612	1,192	895	588	581	299	213	307	72	2
White spruce	27,668	11,070	5,750	5,161	3,079	1,241	807	313	152	46	25	20	4	--	--
Black spruce	136,345	81,840	34,317	14,735	4,313	924	181	21	11	3	--	--	--	--	--
Balsam fir	298,300	182,037	60,761	35,421	12,735	5,192	1,600	314	230	10	--	--	--	--	--
Hemlock	31,420	11,413	6,128	3,410	2,858	2,374	1,654	1,325	773	694	344	212	218	17	--
Tamarack	46,113	25,126	12,504	5,663	2,186	421	188	21	--	4	--	--	--	--	--
Northern white-cedar	143,918	49,684	42,495	28,399	14,841	5,344	1,924	842	273	66	30	14	6	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	820,949	404,909	191,435	121,644	56,676	23,867	10,959	4,712	2,751	1,837	900	586	582	89	2
Hardwoods															
White oak	4,617	3,363	--	200	470	287	140	91	33	20	6	5	2	--	--
Select red oak	45,579	20,090	4,485	7,491	4,880	3,798	2,388	1,193	672	252	150	92	68	20	--
Other red oak	19,809	12,254	1,833	2,295	1,440	886	552	297	120	78	28	14	12	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	3,602	402	1,519	941	513	80	88	56	--	--	--	--	3	--	--
Basswood	57,297	12,841	10,884	12,791	10,349	5,605	2,729	1,090	470	249	126	80	75	8	--
Beech	6,584	5,244	537	119	257	88	69	89	75	40	35	11	20	--	--
Yellow birch	37,375	15,403	11,520	4,567	2,556	1,229	811	455	359	268	99	56	45	7	--
Hard maple	324,549	169,474	73,086	40,785	21,914	9,210	3,988	2,256	1,490	1,032	599	346	340	29	--
Soft maple	283,880	168,148	64,291	28,634	13,950	5,694	1,886	724	250	159	84	23	36	1	--
Elm	72,314	43,492	14,378	6,095	3,215	2,155	1,358	629	484	268	114	61	61	4	--
Black ash	85,873	52,065	19,907	7,716	4,139	1,148	528	211	97	41	6	13	2	--	--
White & green ash	33,137	21,433	3,445	2,959	2,436	1,303	809	496	157	70	24	3	2	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	694	186	186	--	23	--	76	201	11	5	--	--	--	4	2
Willow	685	564	--	--	62	--	10	26	9	12	--	--	2	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	12,584	8,247	742	1,865	781	366	240	225	60	18	21	16	2	1	--
Bigtooth aspen	82,675	55,831	8,799	5,956	5,518	3,715	1,882	714	188	66	3	3	--	--	--
Quaking aspen	558,910	421,801	58,795	29,435	24,022	15,017	6,669	2,254	706	153	46	10	2	--	--
Paper birch	148,411	53,344	36,370	27,178	19,876	8,097	2,550	745	198	38	10	3	2	--	--
Black cherry	71,591	58,556	6,760	3,261	1,838	593	292	258	26	--	7	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	298	--	--	--	69	40	84	60	27	18	--	--	--	--	--
Other hardwoods	1,544	1,536	--	--	--	--	8	--	--	--	--	--	--	--	--
Total	1,852,008	1,124,274	317,537	182,288	118,308	59,311	27,157	12,070	5,432	2,787	1,358	736	674	74	2
All species	2,672,957	1,529,183	508,972	303,932	174,984	83,178	38,116	16,782	8,183	4,624	2,258	1,322	1,256	163	4

Table 21.--Net volume of growing stock on commercial forest land by species group, Northeast Unit, Wisconsin, 1968 and 1983

(In thousand cubic feet)

Species group	1968[1/]	1983
Softwoods		
Jack pine	101,100	98,249
Red pine	118,600	264,500
White pine	200,000	208,242
White spruce	46,800	72,646
Black spruce	62,500	76,929
Balsam fir	204,500	235,337
Hemlock	229,400	188,149
Tamarack	25,500	38,276
Northern white-cedar	159,800	241,284
Other softwoods	--	--
Total	1,148,200	1,423,612
Hardwoods		
White oak	10,900	10,329
Select red oak	143,300	209,694
Other red oak	40,500	42,462
Hickory	4,600	10,553
Basswood	185,200	273,476
Beech	13,100	14,767
Yellow birch	97,100	89,587
Hard maple	439,000	639,062
Soft maple	194,000	298,795
Elm	212,000	116,361
Ash	127,000	152,703
Cottonwood	4,400	7,586
Willow	2,200	2,020
Balsam poplar	21,700	26,115
Bigtooth aspen	148,600	153,953
Quaking aspen	536,700	589,553
Paper birch	272,800	366,696
Black cherry	21,000	41,678
Butternut	3,500	4,970
Other hardwoods	100	104
Total	2,477,700	3,050,464
All species	3,625,900	4,474,076

[1/] Figures have been adjusted from those published after the 1968 survey to conform to 1983 volumes because of changes in survey procedures.

Table 22.--Net volume of all live trees on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods													
Jack pine	108,609	31,938	27,622	22,596	16,403	6,370	3,109	397	174	--	--	--	--
Red pine	267,118	54,880	54,000	43,059	36,452	16,510	20,708	18,246	10,920	8,224	4,119	--	--
White pine	216,957	6,180	12,506	15,351	20,626	23,149	21,727	28,329	19,458	17,304	36,148	15,683	496
White spruce	76,470	10,664	18,696	13,761	13,486	8,184	5,898	2,237	1,546	1,609	389	--	--
Black spruce	78,118	38,308	24,672	10,666	3,380	507	433	152	--	--	--	--	--
Balsam fir	240,064	72,272	70,279	53,262	26,847	8,268	8,650	486	--	--	--	--	--
Hemlock	195,989	5,159	12,440	19,727	23,621	28,508	23,335	28,623	18,062	14,117	19,671	2,726	--
Tamarack	39,417	18,003	13,496	4,253	2,972	533	--	160	--	--	--	--	--
Northern white-cedar	271,548	74,433	78,557	52,592	31,630	18,914	8,996	3,054	1,906	931	535	--	--
Eastern redcedar	53	53	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	921	--	--	137	462	--	322	--	--	--	--	--	--
Total	1,495,264	311,890	312,268	235,404	175,879	110,943	93,178	81,684	52,066	42,185	60,862	18,409	496
Hardwoods													
White oak	11,191	537	2,001	2,459	1,954	1,818	1,012	706	219	270	215	--	--
Select red oak	225,018	27,985	31,877	40,394	38,317	29,979	21,782	10,519	8,209	5,828	6,456	3,672	--
Other red oak	52,482	6,912	8,523	9,233	9,084	7,860	4,112	3,226	1,349	739	1,444	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	10,882	3,621	3,396	787	1,601	1,226	--	--	--	--	251	--	--
Basswood	285,351	39,581	63,055	61,060	46,183	27,168	15,476	11,220	7,370	5,700	6,986	1,484	68
Beech	17,756	440	1,702	971	1,490	2,408	2,757	2,612	2,013	870	2,077	416	--
Yellow birch	108,126	9,207	14,488	15,814	15,045	12,099	12,138	12,696	5,951	4,402	5,003	1,283	--
Hard maple	702,384	132,125	138,985	105,319	72,251	59,238	52,700	46,092	34,808	24,412	32,045	4,409	--
Soft maple	335,768	98,648	91,955	63,923	34,085	19,099	8,649	7,873	5,684	1,698	3,522	632	--
Elm	129,677	10,885	16,009	21,175	21,152	15,893	16,164	11,510	6,306	3,986	5,651	946	--
Black ash	87,713	31,429	26,175	12,598	8,098	4,064	2,819	1,451	236	712	131	--	--
White & green ash	73,918	10,444	15,943	13,260	13,102	11,541	4,982	2,966	1,308	203	169	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	7,586	--	146	--	1,160	4,692	344	186	--	--	--	482	576
Willow	2,340	--	400	--	167	600	299	564	--	--	310	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	26,542	3,542	4,245	3,716	4,062	5,765	1,917	690	1,154	1,104	181	166	--
Bigtooth aspen	164,626	19,255	37,917	43,194	33,851	19,393	7,101	3,211	290	414	--	--	--
Quaking aspen	631,740	114,009	157,625	163,795	109,082	53,258	22,762	7,389	2,828	768	224	--	--
Paper birch	389,410	108,484	130,806	85,186	39,818	16,173	6,231	1,548	767	158	134	105	--
Black cherry	56,818	19,553	15,331	8,675	5,033	7,044	734	138	310	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	5,162	--	469	436	1,381	1,268	899	645	--	--	64	--	--
Other hardwoods	104	--	--	--	104	--	--	--	--	--	--	--	--
Noncommercial species	15,246	8,648	3,917	1,379	1,175	127	--	--	--	--	--	--	--
Total	3,339,840	645,305	764,965	653,374	458,195	300,713	182,878	125,242	78,802	51,264	64,863	13,595	644
All species	4,835,104	957,195	1,077,233	888,778	634,074	411,656	276,056	206,926	130,868	93,449	125,725	32,004	1,140

Table 23.--Net volume of timber on commercial forest land by class of timber and softwoods and hardwoods, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Class of timber	All species	Softwoods	Hardwoods
Live trees			
Growing-stock trees			
Poletimber	2,486,561	594,913	1,891,648
Sawtimber			
Saw log portion	1,387,795	644,524	743,271
Upper stem portion	599,720	184,175	415,545
Subtotal	1,987,515	828,699	1,158,816
Total growing stock	4,474,076	1,423,612	3,050,464
Cull trees			
Rough and rotten cull trees			
Poletimber	202,000	29,599	172,401
Sawtimber	112,657	33,120	79,537
Subtotal	314,657	62,719	251,938
Short-log trees	46,371	8,933	37,438
Total cull	361,028	71,652	289,376
All live trees	4,835,104	1,495,264	3,339,840
Salvable dead trees			
Growing-stock trees	79,937	19,387	60,550
Cull trees	1,914	351	1,563
All salvable dead trees	81,851	19,738	62,113
All classes	4,916,955	1,515,002	3,401,953

Table 24.--Net volume of all live trees by individual species, Northeast Unit, Wisconsin, 1983

Species	All live trees						
	Total all live	Growing stock	Short-log cull	Rough and rotten cull	Total saw log	Saw-log size trees	
						Sawtimber	Short-log
	-Thousand cubic feet-				-Thousand board feet[1]-		
Softwoods							
Jack pine	108,609	98,249	854	9,506	230,136	227,227	2,909
Red pine	267,118	264,500	172	2,446	902,735	902,043	692
White pine	216,957	208,242	1,216	7,499	1,036,500	1,032,510	3,990
White spruce	76,470	72,646	118	3,706	223,953	223,435	518
Black spruce	78,118	76,929	192	997	65,709	65,215	494
Balsam fir	240,064	235,337	482	4,245	423,418	422,051	1,367
Hemlock	195,989	188,149	2,617	5,223	778,976	772,542	6,434
Tamarack	39,417	38,276	--	1,141	41,560	41,560	--
Northern white-cedar	271,548	241,284	3,282	26,982	521,991	510,669	11,322
Eastern redcedar	53	--	--	53	--	--	--
Scotch pine	921	--	--	921	--	--	--
Total	1,495,264	1,423,612	8,933	62,719	4,224,978	4,197,252	27,726
Hardwoods							
White oak	7,024	6,426	239	359	16,781	16,126	655
Bur oak	4,167	3,903	196	68	13,141	12,611	530
Northern red oak	225,018	209,694	3,823	11,501	574,416	565,970	8,446
Northern pin oak	49,639	39,789	1,636	8,214	96,744	93,054	3,690
Black oak	2,843	2,673	--	170	12,362	12,362	--
Bitternut hickory	10,882	10,553	--	329	14,715	14,715	--
American basswood	285,351	273,476	1,494	10,381	565,504	562,327	3,177
Beech	17,756	14,767	1,087	1,902	62,232	59,359	2,873
Yellow birch	108,126	89,587	4,250	14,289	283,145	272,974	10,171
Sugar maple	702,384	639,062	9,734	53,588	1,492,957	1,469,909	23,048
Red maple	334,891	298,043	4,446	32,402	362,058	349,884	12,174
Silver maple	877	752	--	125	1,471	1,471	--
American elm	114,124	101,899	3,618	8,607	295,648	286,711	8,937
Slippery elm	3,917	3,518	167	232	12,681	12,262	419
Rock elm	11,636	10,944	--	692	25,054	25,054	--
Black ash	87,713	81,141	312	6,260	100,249	99,241	1,008
White ash	53,409	52,390	--	1,019	123,482	123,482	--
Green ash	20,509	19,172	63	1,274	56,144	55,959	185
Eastern cottonwood	7,586	7,586	--	--	30,690	30,690	--
Black willow	2,340	2,020	--	320	7,351	7,351	--
Balsam poplar	26,542	26,115	--	427	64,911	64,911	--
Bigtooth aspen	164,626	153,953	721	9,952	277,416	276,262	1,154
Quaking aspen	631,740	589,553	2,204	39,983	879,319	874,391	4,928
Paper birch	389,410	366,696	2,020	20,694	306,579	301,063	5,516
Black cherry	56,818	41,678	1,428	13,712	64,220	60,306	3,914
Butternut	5,162	4,970	--	192	22,406	22,406	--
Boxelder	104	104	--	--	577	577	--
Total	3,324,594	3,050,464	37,438	236,692	5,762,253	5,671,428	90,825
All species[2]	4,819,858	4,474,076	46,371	299,411	9,987,231	9,868,680	118,551

[1] International 1/4-inch rule.

[2] These totals do not include volume for noncommercial species. Volumes for individual noncommercial species are found in Table 25.

Table 25.--Net volume of noncommercial species on commercial forest land by individual species, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species	Cull volume
Eastern hophornbeam	11,241
Pincherry	197
Chokecherry	3,737
Peachleaf willow	71
All species	15,246

Table 26.--Net volume of growing stock on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	98,249	493	--	1,131	8,219	4,012	24,005	10,350	20,100	5,287	24,652
Red pine	264,500	8,916	24,182	6,596	28,539	2,270	41,542	38,703	52,281	18,358	43,113
White pine	208,242	5,947	6,046	2,949	6,469	59,365	28,822	23,579	30,416	11,899	32,750
White spruce	72,646	8,916	26,628	4,341	2,313	201	15,583	2,505	7,685	1,306	3,168
Black spruce	76,929	3,106	16,847	6,017	3,518	7,579	6,307	--	21,137	2,185	10,233
Balsam fir	235,337	16,690	54,487	33,638	23,806	2,598	28,194	6,641	41,889	5,899	21,495
Hemlock	188,149	22,179	40,050	5,168	6,428	66,763	11,704	7,407	9,843	5,414	13,193
Tamarack	38,276	4,310	2,639	7,808	1,366	1,102	4,825	3,985	5,006	3,809	3,426
Northern white-cedar	241,284	10,035	40,372	12,929	3,594	24,734	51,464	41,084	17,126	28,968	10,978
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	1,423,612	80,592	211,251	80,577	84,252	168,624	212,446	134,254	205,483	83,125	163,008
Hardwoods											
White oak	10,329	--	--	291	109	2,987	3,935	200	--	998	1,809
Select red oak	209,694	7,865	2,757	7,343	14,214	34,389	40,767	23,901	27,117	22,132	29,209
Other red oak	42,462	1,254	--	--	--	3,956	25,761	4,849	1,114	4,981	547
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	10,553	--	--	776	158	1,853	1,429	251	--	6,086	--
Basswood	273,476	22,434	73,341	52,195	17,878	28,854	24,451	19,411	6,785	19,329	8,798
Beech	14,767	--	774	--	--	8,004	766	609	--	4,614	--
Yellow birch	89,587	13,647	19,771	9,073	4,441	19,073	2,555	2,356	4,110	5,186	9,375
Hard maple	639,062	56,515	141,136	97,931	39,455	68,751	45,369	22,236	27,946	62,048	77,675
Soft maple	298,795	7,060	16,497	29,685	31,845	20,873	67,649	35,444	35,957	26,661	27,124
Elm	116,361	7,296	18,268	16,356	10,998	8,674	14,570	15,146	2,951	20,327	1,775
Black ash	81,141	593	8,983	5,027	10,556	5,793	16,363	10,680	7,487	14,646	1,013
White & green ash	71,562	1,130	11,049	7,308	9,912	4,660	8,832	13,385	1,039	13,594	653
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	7,586	--	--	158	--	--	1,058	5,113	--	1,257	--
Willow	2,020	--	--	--	--	--	304	1,113	--	603	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	26,115	491	4,253	1,942	--	239	13,398	1,503	1,766	2,523	--
Bigtooth aspen	153,953	6,466	1,681	12,219	6,361	10,684	34,698	32,495	15,898	5,436	28,015
Quaking aspen	589,553	59,249	74,477	70,863	72,611	21,484	96,937	42,199	72,770	18,824	60,139
Paper birch	366,696	18,409	49,861	23,394	33,986	9,361	53,702	33,847	72,881	9,838	61,417
Black cherry	41,678	1,631	14,076	8,860	5,008	821	3,977	1,395	986	3,909	1,015
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	4,970	--	1,036	--	--	369	129	1,057	--	2,379	--
Other hardwoods	104	--	--	--	--	104	--	--	--	--	--
Total	3,050,464	204,040	437,960	343,421	257,532	250,929	456,650	267,190	278,807	245,371	308,564
All species	4,474,076	284,632	649,211	423,998	341,784	419,553	669,096	401,444	484,290	328,496	471,572

Table 27.--Net volume of sawtimber on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	227,227	1,967	--	2,558	18,016	11,431	68,472	12,101	39,810	8,169	64,703
Red pine	902,043	38,357	127,245	33,453	46,644	13,090	106,455	98,219	218,867	10,374	209,339
White pine	1,032,510	30,314	32,034	8,769	34,080	323,462	132,215	119,414	142,234	53,226	156,762
White spruce	223,435	35,242	65,536	15,936	11,718	857	36,872	10,587	26,309	6,365	14,013
Black spruce	65,215	3,796	13,529	9,552	3,626	5,829	6,214	--	13,457	616	8,596
Balsam fir	422,051	25,923	125,929	56,752	27,630	2,924	43,906	12,904	73,000	11,043	42,040
Hemlock	772,542	98,777	165,993	20,841	24,216	290,399	46,660	22,009	35,318	13,853	54,476
Tamarack	41,560	3,808	2,870	5,967	2,897	4,636	6,264	1,546	3,521	6,565	3,486
Northern white-cedar	510,669	30,802	100,084	23,913	6,247	83,130	94,722	63,280	42,063	39,120	27,308
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	4,197,252	268,986	633,220	177,741	175,074	735,758	541,780	340,060	594,579	149,331	580,723
Hardwoods											
White oak	28,737	--	--	--	--	9,097	8,263	984	--	3,654	6,739
Select red oak	565,970	15,691	10,789	20,857	29,172	129,246	78,568	37,685	78,583	78,925	86,454
Other red oak	105,416	2,739	--	--	--	14,650	59,476	12,085	1,950	12,685	1,831
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	14,715	--	--	--	740	3,829	678	1,188	--	8,280	--
Basswood	562,327	47,884	142,210	86,299	29,003	112,148	38,825	18,154	16,591	49,234	21,979
Beech	59,359	--	3,868	--	--	30,446	1,566	836	--	22,643	--
Yellow birch	272,974	53,675	67,999	21,036	12,453	55,778	4,886	5,369	14,823	4,940	32,015
Hard maple	1,469,909	140,374	276,188	216,967	56,853	248,699	77,457	22,442	34,169	220,968	175,792
Soft maple	351,355	9,757	30,969	35,995	36,555	28,572	66,711	48,376	21,424	54,724	18,272
Elm	324,027	16,901	40,435	35,219	35,661	32,955	35,594	50,817	8,605	64,813	3,027
Black ash	99,241	684	11,816	4,586	19,982	12,877	11,395	12,452	9,026	14,893	1,530
White & green ash	179,441	4,047	35,626	19,238	17,424	4,688	14,764	42,682	2,901	37,148	923
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	30,690	--	--	649	--	--	4,968	20,399	--	4,674	--
Willow	7,351	--	--	--	--	--	655	4,164	--	2,532	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	64,911	744	8,787	3,931	--	--	36,237	5,082	5,843	4,287	--
Bigtooth aspen	276,262	13,678	1,238	25,903	9,436	19,325	53,511	61,237	26,892	12,914	52,128
Quaking aspen	874,391	75,544	156,161	73,109	97,890	32,543	147,346	56,640	104,640	25,884	104,634
Paper birch	301,063	25,296	54,897	13,535	16,177	9,896	25,340	28,007	48,315	8,602	70,998
Black cherry	60,306	752	29,379	10,978	879	2,886	3,150	2,327	--	9,023	932
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	22,406	--	3,462	--	--	1,929	747	5,217	--	11,051	--
Other hardwoods	577	--	--	--	--	577	--	--	--	--	--
Total	5,671,428	407,766	873,824	568,302	362,225	750,141	670,137	436,143	373,762	651,874	577,254
All species	9,868,680	676,752	1,507,044	746,043	537,299	1,485,899	1,211,917	776,203	968,341	801,205	1,157,977

[1/] International 1/4-inch rule.

Table 28.--Net volume of growing stock on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods													
Jack pine	98,249	28,010	26,225	20,789	14,982	5,532	2,412	125	174	--	--	--	--
Red pine	264,500	53,583	53,529	42,750	36,452	16,471	20,570	18,074	10,920	8,032	4,119	--	--
White pine	208,242	5,704	11,597	14,267	18,912	21,976	20,813	27,475	18,832	17,133	35,565	15,472	496
White spruce	72,646	10,664	16,424	12,834	13,368	8,184	5,473	2,155	1,546	1,609	389	--	--
Black spruce	76,929	38,040	24,287	10,264	3,246	507	433	152	--	--	--	--	--
Balsam fir	235,337	71,028	69,062	52,304	26,018	8,087	8,352	486	--	--	--	--	--
Hemlock	188,149	4,779	11,202	18,528	22,066	27,297	22,572	27,854	17,651	14,071	19,403	2,726	--
Tamarack	38,276	17,476	12,946	4,253	2,972	469	--	160	--	--	--	--	--
Northern white-cedar	241,284	68,844	71,204	45,528	25,834	16,958	7,641	2,526	1,408	865	476	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	1,423,612	298,128	296,476	221,517	163,850	105,481	88,266	79,007	50,531	41,710	59,952	18,198	496
Hardwoods													
White oak	10,329	469	1,913	2,377	1,717	1,723	813	706	219	270	122	--	--
Select red oak	209,694	24,368	29,757	38,500	37,115	26,537	20,668	10,077	7,695	5,677	5,797	3,503	--
Other red oak	42,462	5,427	7,057	7,727	7,608	6,011	3,175	2,666	1,202	739	850	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	10,553	3,621	3,141	787	1,527	1,226	--	--	--	--	251	--	--
Basswood	273,476	35,632	61,174	58,987	44,885	26,486	15,308	10,659	6,956	5,309	6,665	1,415	--
Beech	14,767	440	1,702	971	1,120	2,222	2,454	1,769	1,839	582	1,668	--	--
Yellow birch	89,587	7,899	13,039	11,265	12,266	10,133	10,869	10,892	4,927	3,558	3,777	962	--
Hard maple	639,062	122,952	128,163	93,205	64,092	52,604	47,806	42,753	31,694	22,966	28,878	3,949	--
Soft maple	298,795	91,038	83,150	57,209	29,536	15,637	7,355	6,206	4,209	1,346	2,983	126	--
Elm	116,361	9,246	14,496	18,549	19,768	13,905	14,580	10,561	5,593	3,824	5,160	679	--
Black ash	81,141	29,336	23,920	11,132	7,462	4,024	2,779	1,409	236	712	131	--	--
White & green ash	71,562	9,559	15,041	13,122	13,045	11,396	4,982	2,737	1,308	203	169	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	7,586	--	146	--	1,160	4,692	344	186	--	--	--	482	576
Willow	2,020	--	282	--	167	600	299	520	--	--	152	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	26,115	3,542	4,245	3,574	3,777	5,765	1,917	690	1,154	1,104	181	166	--
Bigtooth aspen	153,953	17,558	34,675	41,348	32,363	18,174	6,498	2,907	172	258	--	--	--
Quaking aspen	589,553	107,027	151,277	152,671	101,082	48,298	20,642	5,758	2,156	486	156	--	--
Paper birch	366,696	102,238	124,280	80,251	37,158	15,311	5,387	1,353	426	158	134	--	--
Black cherry	41,678	12,978	11,637	6,336	4,385	5,298	734	--	310	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	4,970	--	469	436	1,381	1,268	771	645	--	--	--	--	--
Other hardwoods	104	--	--	--	104	--	--	--	--	--	--	--	--
Total	3,050,464	583,330	709,564	598,447	421,718	271,310	167,381	112,494	70,096	47,192	57,074	11,282	576
All species	4,474,076	881,458	1,006,040	819,964	585,568	376,791	255,647	191,501	120,627	88,902	117,026	29,480	1,072

Table 29.--Net volume of sawtimber on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	227,227	107,540	76,831	28,690	12,584	657	925	--	--	--	--
Red pine	902,043	247,160	207,482	93,621	117,050	103,376	62,813	46,557	23,984	--	--
White pine	1,032,510	56,852	88,297	111,128	111,111	151,604	106,507	98,941	210,521	94,449	3,100
White spruce	223,435	57,805	64,521	41,648	28,567	11,493	8,370	8,852	2,179	--	--
Black spruce	65,215	43,799	15,651	2,597	2,332	836	--	--	--	--	--
Balsam fir	422,051	216,730	119,805	39,736	43,238	2,542	--	--	--	--	--
Hemlock	772,542	65,897	89,770	119,161	103,018	130,866	84,701	68,644	96,600	13,885	--
Tamarack	41,560	22,247	15,861	2,560	--	892	--	--	--	--	--
Northern white-cedar	510,669	221,294	130,936	88,490	40,910	13,726	7,792	4,823	2,698	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	4,197,252	1,039,324	809,154	527,631	458,810	415,992	271,108	227,817	335,982	108,334	3,100
Hardwoods											
White oak	28,737	--	9,580	8,777	4,042	3,397	1,062	1,291	588	--	--
Select red oak	565,970	--	178,066	126,306	99,210	48,792	37,837	28,206	29,377	18,176	--
Other red oak	105,416	--	36,063	28,134	15,062	12,657	5,756	3,583	4,161	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	14,715	--	7,580	5,947	--	--	--	--	1,188	--	--
Basswood	562,327	--	210,140	124,710	73,572	51,933	34,299	26,482	33,876	7,315	--
Beech	59,359	--	5,969	11,289	12,313	8,884	9,309	2,998	8,597	--	--
Yellow birch	272,974	--	49,856	45,431	52,062	54,627	25,710	18,997	20,793	5,498	--
Hard maple	1,469,909	--	300,717	254,366	237,050	216,985	163,679	120,595	154,719	21,798	--
Soft maple	351,355	--	164,753	80,929	36,140	29,453	19,613	6,244	13,635	588	--
Elm	324,027	--	82,862	59,199	63,966	47,145	25,505	17,701	24,343	3,306	--
Black ash	99,241	--	47,823	23,750	14,919	7,347	1,222	3,548	632	--	--
White & green ash	179,441	--	74,206	59,452	24,680	13,214	6,172	933	784	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	30,690	--	4,820	18,683	1,429	790	--	--	--	2,210	2,758
Willow	7,351	--	706	2,490	1,260	2,203	--	--	692	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	64,911	--	15,215	24,897	8,711	3,281	5,583	5,455	909	860	--
Bigtooth aspen	276,262	--	144,712	84,354	30,917	14,122	857	1,300	--	--	--
Quaking aspen	874,391	--	477,442	241,704	108,274	31,275	12,043	2,752	901	--	--
Paper birch	301,063	--	182,895	78,336	28,492	7,327	2,352	890	771	--	--
Black cherry	60,306	--	25,913	29,083	3,753	--	1,557	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	22,406	--	7,999	7,008	4,087	3,312	--	--	--	--	--
Other hardwoods	577	--	577	--	--	--	--	--	--	--	--
Total	5,671,428	--	2,027,894	1,314,845	819,939	556,744	352,556	240,975	295,966	59,751	2,758
All species	9,868,680	1,039,324	2,837,048	1,842,476	1,278,749	972,736	623,664	468,792	631,948	168,085	5,858

[1/] International 1/4-inch rule.

Table 30.--Net volume of growing stock on commercial forest land by species group and forest type, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	98,249	63,447	12,008	5,449	237	--	366	417
Red pine	264,500	4,270	192,529	15,483	2,008	--	2,465	163
White pine	208,242	1,701	12,245	88,695	5,583	603	2,354	6,902
White spruce	72,646	--	1,115	2,206	13,814	18,592	--	3,095
Black spruce	76,929	212	613	2,528	14,074	--	37,377	12,028
Balsam fir	235,337	--	1,921	4,936	68,312	560	18,079	19,539
Hemlock	188,149	--	1,074	2,637	4,621	131	1,059	6,592
Tamarack	38,276	--	--	112	1,964	--	3,892	5,825
Northern white-cedar	241,284	--	153	2,158	23,237	--	2,461	153,554
Other softwoods	--	--	--	--	--	--	--	--
Total	1,423,612	69,630	221,658	124,204	133,850	19,886	68,053	208,115
Hardwoods								
White oak	10,329	--	--	624	--	--	--	--
Select red oak	209,694	180	1,076	2,078	231	--	587	168
Other red oak	42,462	1,299	2,006	375	99	--	--	132
Select hickory	--	--	--	--	--	--	--	--
Other hickory	10,553	--	--	--	--	--	--	251
Basswood	273,476	--	--	416	--	299	--	--
Beech	14,767	--	--	--	--	--	--	--
Yellow birch	89,587	--	144	--	2,168	--	259	3,599
Hard maple	639,062	--	898	345	933	280	126	--
Soft maple	298,795	104	964	5,228	6,307	--	897	3,440
Elm	116,361	--	1,256	--	530	150	--	1,243
Black ash	81,141	--	--	294	2,537	--	--	9,573
White & green ash	71,562	--	887	--	--	--	--	273
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	7,586	--	--	4,493	--	--	--	--
Willow	2,020	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	26,115	--	--	--	1,282	325	200	1,037
Bigtooth aspen	153,953	1,471	1,183	542	1,133	--	846	1,027
Quaking aspen	589,553	4,160	13,188	12,026	16,303	3,074	10,569	4,979
Paper birch	366,696	1,132	2,715	6,805	10,689	--	2,446	9,356
Black cherry	41,678	--	180	--	664	113	151	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	4,970	--	--	--	--	--	--	--
Other hardwoods	104	--	--	--	--	--	--	--
Total	3,050,464	8,346	24,497	33,226	42,876	4,241	16,081	35,078
All species	4,474,076	77,976	246,155	157,430	176,726	24,127	84,134	243,193

(Table 30 continued on next page)

(Table 30 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	3,090	--	1,111	11,829	147	--	148
Red pine	192	6,836	--	7,163	23,793	9,598	--	--
White pine	1,837	6,967	5,305	53,765	15,436	6,849	--	--
White spruce	177	--	2,912	6,789	19,421	4,525	--	--
Black spruce	2,377	--	789	1,943	4,132	856	--	--
Balsam fir	1,822	65	18,182	40,356	46,921	14,571	--	73
Hemlock	--	422	9,452	157,915	2,710	1,536	--	--
Tamarack	19,623	421	1,165	3,826	644	804	--	--
Northern white-cedar	744	--	17,229	26,439	9,486	5,823	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	26,772	17,801	55,034	299,307	134,372	44,709	--	221
Hardwoods								
White oak	--	5,817	781	1,435	1,672	--	--	--
Select red oak	120	92,464	1,773	58,654	33,502	18,861	--	--
Other red oak	--	25,162	668	3,851	8,021	518	--	331
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	2,647	--	7,376	279	--	--	--
Basswood	--	4,411	4,361	253,071	8,972	1,946	--	--
Beech	--	299	554	13,914	--	--	--	--
Yellow birch	--	278	3,411	76,449	1,720	1,559	--	--
Hard maple	--	8,284	3,420	588,205	30,199	6,372	--	--
Soft maple	754	14,977	42,246	135,003	66,937	21,938	--	--
Elm	--	663	23,877	81,484	6,581	577	--	--
Black ash	--	--	48,888	15,314	4,390	145	--	--
White & green ash	--	1,228	18,330	46,039	4,075	730	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	1,257	1,058	778	--	--	--
Willow	--	--	1,684	150	--	186	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	4,460	2,865	14,849	1,097	--	--
Bigtooth aspen	488	5,681	1,321	28,244	104,701	7,316	--	--
Quaking aspen	909	7,422	13,720	100,904	371,127	30,993	--	179
Paper birch	2,848	15,316	10,087	84,779	91,866	128,657	--	--
Black cherry	--	1,001	613	25,217	12,971	768	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	--	--	3,415	1,555	--	--	--
Other hardwoods	--	--	--	104	--	--	--	--
Total	5,119	185,650	181,451	1,527,531	764,195	221,663	--	510
All species	31,891	203,451	236,485	1,826,838	898,567	266,372	--	731

Table 31.--Net volume of sawtimber on commercial forest land by species group and forest type, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	227,227	133,403	20,507	20,914	1,258	--	710	--
Red pine	902,043	16,939	558,139	73,975	11,548	--	12,708	911
White pine	1,032,510	4,999	52,748	449,452	28,477	3,330	8,839	33,379
White spruce	223,435	--	4,627	10,723	44,764	45,339	--	8,487
Black spruce	65,215	488	--	4,406	14,399	--	20,335	14,077
Balsam fir	422,051	--	2,007	8,801	102,564	1,661	68,837	18,661
Hemlock	772,542	--	2,339	10,464	19,498	648	4,634	23,356
Tamarack	41,560	--	--	--	5,166	--	1,204	4,166
Northern white-cedar	510,669	--	782	9,149	62,957	--	5,980	256,847
Other softwoods	--	--	--	--	--	--	--	--
Total	4,197,252	155,829	641,149	587,884	290,631	50,978	123,247	359,884
Hardwoods								
White oak	28,737	--	--	829	--	--	--	--
Select red oak	565,970	876	2,587	8,469	628	--	805	881
Other red oak	105,416	2,285	2,770	934	--	--	--	677
Select hickory	--	--	--	--	--	--	--	--
Other hickory	14,715	--	--	--	--	--	--	1,188
Basswood	562,327	--	--	1,402	--	--	--	--
Beech	59,359	--	--	--	--	--	--	--
Yellow birch	272,974	--	611	--	8,888	--	1,291	9,352
Hard maple	1,469,909	--	734	--	2,572	1,507	698	--
Soft maple	351,355	--	--	14,269	6,390	--	2,106	2,181
Elm	324,027	--	--	--	2,352	663	--	4,433
Black ash	99,241	--	--	--	5,450	--	--	10,916
White & green ash	179,441	--	5,114	--	--	--	--	1,570
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	30,690	--	--	17,855	--	--	--	--
Willow	7,351	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	64,911	--	--	--	626	705	--	2,999
Bigtooth aspen	276,262	3,005	2,431	1,693	1,006	--	3,259	1,520
Quaking aspen	874,391	7,138	22,125	21,896	14,742	692	19,803	7,187
Paper birch	301,063	1,655	3,746	16,888	5,455	--	3,157	5,480
Black cherry	60,306	--	--	--	1,886	752	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	22,406	--	--	--	--	--	--	--
Other hardwoods	577	--	--	--	--	--	--	--
Total	5,671,428	14,959	40,118	84,235	49,995	4,319	31,119	48,384
All species	9,868,680	170,788	681,267	672,119	340,626	55,297	154,366	408,268

[1/] International 1/4-inch rule.

(Table 31 continued on next page)

(Table 31 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	9,300	--	2,660	37,710	765	--	--
Red pine	1,112	27,601	--	35,128	110,593	53,389	--	--
White pine	6,298	37,711	25,695	273,383	77,676	30,523	--	--
White spruce	902	--	9,916	28,147	60,008	10,522	--	--
Black spruce	3,481	--	1,686	2,437	3,906	--	--	--
Balsam fir	1,315	--	20,995	87,880	84,652	24,678	--	--
Hemlock	--	1,773	29,958	663,840	11,170	4,862	--	--
Tamarack	12,664	2,251	4,880	7,869	1,399	1,961	--	--
Northern white-cedar	1,693	--	41,113	101,663	14,182	16,303	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	27,465	78,636	134,243	1,203,007	401,296	143,003	--	--
Hardwoods								
White oak	--	17,524	3,654	2,197	4,533	--	--	--
Select red oak	595	218,883	5,238	196,546	75,460	55,002	--	--
Other red oak	--	67,060	1,190	12,437	18,063	--	--	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	--	--	13,527	--	--	--	--
Basswood	--	10,625	11,893	519,531	15,275	3,601	--	--
Beech	--	--	1,042	58,317	--	--	--	--
Yellow birch	--	1,393	8,062	239,167	2,768	1,442	--	--
Hard maple	--	16,981	6,720	1,419,485	13,122	8,090	--	--
Soft maple	1,248	18,118	82,960	175,070	33,477	15,536	--	--
Elm	--	--	78,307	218,243	19,321	708	--	--
Black ash	--	--	59,249	21,492	2,134	--	--	--
White & green ash	--	3,361	60,610	98,202	8,379	2,205	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	4,674	4,968	3,193	--	--	--
Willow	--	--	6,563	--	--	788	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	14,171	12,039	34,371	--	--	--
Bigtooth aspen	1,358	21,562	3,660	69,409	155,566	11,793	--	--
Quaking aspen	878	11,150	20,905	209,326	490,022	48,527	--	--
Paper birch	1,475	12,851	11,414	111,214	45,062	82,666	--	--
Black cherry	--	1,847	1,997	32,366	21,458	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	--	--	14,513	7,893	--	--	--
Other hardwoods	--	--	--	577	--	--	--	--
Total	5,554	401,355	382,309	3,428,626	950,097	230,358	--	--
All species	33,019	479,991	516,552	4,631,633	1,351,393	373,361	--	--

Table 32.--Net volume of growing stock on commercial forest land by species group and ownership class, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Softwoods										
Jack pine	98,249	9,663	--	10,937	26,621	5,949	8,728	6,282	2,110	27,959
Red pine	264,500	56,083	--	24,498	60,422	5,681	22,227	5,346	9,432	80,811
White pine	208,242	18,092	--	15,429	19,927	63,673	11,302	25,120	9,016	45,683
White spruce	72,646	27,840	200	2,229	11,520	280	9,906	2,373	1,514	16,784
Black spruce	76,929	14,136	--	8,884	12,182	7,812	13,398	3,630	1,044	15,843
Balsam fir	235,337	38,770	--	10,849	39,541	3,613	40,247	13,814	12,177	76,326
Hemlock	188,149	25,996	--	3,193	8,527	68,432	39,504	9,446	9,484	23,567
Tamarack	38,276	4,280	--	2,222	4,988	1,218	3,998	3,654	372	17,544
Northern white-cedar	241,284	37,663	--	9,465	31,347	29,263	28,449	40,390	3,743	60,964
Other softwoods	--	--	--	--	--	--	--	--	--	--
Total	1,423,612	232,523	200	87,706	215,075	185,921	177,759	110,055	48,892	365,481
Hardwoods										
White oak	10,329	--	--	--	291	2,987	230	2,242	82	4,497
Select red oak	209,694	18,356	--	21,315	26,969	37,193	21,394	15,648	13,376	55,443
Other red oak	42,462	--	--	808	12,949	3,956	--	6,166	7,251	11,332
Select hickory	--	--	--	--	--	--	--	--	--	--
Other hickory	10,553	--	--	--	--	1,993	2,064	3,636	133	2,727
Basswood	273,476	70,295	--	2,970	29,244	35,899	56,387	17,306	3,993	57,382
Beech	14,767	--	--	--	--	8,369	974	3,694	--	1,730
Yellow birch	89,587	15,898	--	3,325	3,456	19,962	23,583	5,425	3,777	14,161
Hard maple	639,062	133,305	--	15,863	40,329	76,507	138,314	68,529	26,836	139,379
Soft maple	298,795	25,441	--	14,868	56,550	25,570	26,723	46,868	14,120	88,655
Elm	116,361	15,474	--	3,771	10,283	9,154	19,220	16,847	1,277	40,335
Black ash	81,141	7,523	131	367	11,926	6,046	9,302	18,207	521	27,118
White & green ash	71,562	9,965	--	514	8,686	6,646	10,733	17,540	1,797	15,681
Sycamore	--	--	--	--	--	--	--	--	--	--
Cottonwood	7,586	--	--	--	158	--	--	1,058	4,493	1,877
Willow	2,020	--	--	--	150	--	--	606	--	1,264
Hackberry	--	--	--	--	--	--	--	--	--	--
Balsam poplar	26,115	2,740	--	464	7,012	239	637	6,176	--	8,847
Bigtooth aspen	153,953	16,790	--	4,908	21,651	12,846	10,437	12,308	16,268	58,745
Quaking aspen	589,553	88,179	2,489	28,844	105,945	27,598	51,089	48,150	23,433	213,826
Paper birch	366,696	33,781	--	29,627	56,690	15,510	29,911	30,559	26,417	144,201
Black cherry	41,678	11,493	--	1,035	6,634	1,108	6,430	4,450	1,597	8,931
Black walnut	--	--	--	--	--	--	--	--	--	--
Butternut	4,970	849	--	--	131	984	480	935	181	1,410
Other hardwoods	104	--	--	--	--	104	--	--	--	--
Total	3,050,464	450,089	2,620	128,679	399,054	292,671	407,908	326,350	145,552	897,541
All species	4,474,076	682,612	2,820	216,385	614,129	478,592	585,667	436,405	194,444	1,263,022

Table 33.--Net volume of sawtimber on commercial forest land by species group and ownership class, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Softwoods										
Jack pine	227,227	23,086	--	19,252	60,635	20,296	15,522	17,739	8,000	62,697
Red pine	902,043	257,250	--	89,604	143,906	31,807	68,234	23,401	22,115	265,726
White pine	1,032,510	97,788	--	74,082	96,407	344,053	51,288	117,967	41,834	209,091
White spruce	223,435	77,483	665	6,254	32,587	857	36,001	9,913	5,544	54,131
Black spruce	65,215	8,301	--	2,793	17,892	5,829	14,647	2,428	704	12,621
Balsam fir	422,051	112,179	--	15,462	50,501	4,995	95,177	19,582	19,219	104,936
Hemlock	772,542	110,133	--	10,743	29,759	294,329	173,097	29,442	37,878	87,161
Tamarack	41,560	3,808	--	--	4,492	4,636	1,940	6,990	654	19,040
Northern white-cedar	510,669	61,093	--	26,880	60,147	89,630	99,806	66,574	10,204	96,335
Other softwoods	--	--	--	--	--	--	--	--	--	--
Total	4,197,252	751,121	665	245,070	496,326	796,432	555,712	294,036	146,152	911,738
Hardwoods										
White oak	28,737	--	--	--	--	9,097	679	4,661	--	14,300
Select red oak	565,970	18,853	--	60,353	56,193	133,207	61,615	50,846	35,734	149,169
Other red oak	105,416	--	--	--	22,440	14,650	--	19,386	18,738	30,202
Select hickory	--	--	--	--	--	--	--	--	--	--
Other hickory	14,715	--	--	--	--	3,829	2,296	4,204	678	3,708
Basswood	562,327	114,652	--	5,656	35,523	121,118	101,282	58,780	6,146	119,170
Beech	59,359	--	--	--	--	32,273	3,868	17,909	--	5,309
Yellow birch	272,974	53,444	--	14,254	11,272	56,412	83,199	10,620	12,173	31,600
Hard maple	1,469,909	203,550	--	39,287	37,459	258,396	370,826	236,028	40,849	283,514
Soft maple	351,355	29,769	--	14,611	42,162	31,615	30,461	86,808	7,318	108,611
Elm	324,027	33,259	--	12,321	24,765	34,211	48,347	49,784	1,264	120,076
Black ash	99,241	4,551	--	742	13,320	14,487	14,427	17,700	1,659	32,355
White & green ash	179,441	30,435	--	2,940	30,083	7,344	30,823	41,277	1,049	35,490
Sycamore	--	--	--	--	--	--	--	--	--	--
Cottonwood	30,690	--	--	--	649	--	--	4,968	17,855	7,218
Willow	7,351	--	--	--	--	--	--	1,966	--	5,385
Hackberry	--	--	--	--	--	--	--	--	--	--
Balsam poplar	64,911	6,199	--	1,542	13,639	--	2,588	17,425	--	23,518
Bigtooth aspen	276,262	36,053	--	11,241	27,567	24,595	16,758	21,357	27,092	111,599
Quaking aspen	874,391	160,475	896	42,581	135,142	45,682	96,481	77,544	23,088	292,502
Paper birch	301,063	33,715	--	23,884	38,594	18,510	28,782	22,096	14,724	120,758
Black cherry	60,306	25,482	--	--	8,403	2,886	6,856	8,317	--	8,362
Black walnut	--	--	--	--	--	--	--	--	--	--
Butternut	22,406	4,839	--	--	--	3,866	1,788	3,965	976	6,972
Other hardwoods	577	--	--	--	--	577	--	--	--	--
Total	5,671,428	755,276	896	229,412	497,211	812,755	901,076	755,641	209,343	1,509,818
All species	9,868,680	1,506,397	1,561	474,482	993,537	1,609,187	1,456,788	1,049,677	355,495	2,421,556

[1/] International 1/4-inch rule.

Table 34.--Net volume of growing stock on commercial forest land by forest type and stand-age class, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	77,976	1,372	1,004	6,800	28,173	8,716	24,421	1,432	6,058	--	--	--	--	--
Red pine	246,155	4,103	8,587	47,697	82,041	49,562	3,960	12,782	7,498	8,089	13,289	8,547	--	--
White pine	157,430	4,368	1,551	11,457	6,648	8,625	14,739	251	28,875	26,413	3,276	7,446	16,049	27,732
Balsam fir	176,726	8,586	5,741	8,027	20,334	27,642	55,499	17,527	14,676	6,822	1,311	5,539	3,503	1,519
White spruce	24,127	373	4,536	--	--	2,476	16,742	--	--	--	--	--	--	--
Black spruce	84,134	1,894	3,741	10,015	2,324	7,595	6,713	9,099	31,990	7,398	2,996	--	369	--
Northern white-cedar	243,193	1,507	4,483	7,174	2,407	19,890	19,361	31,005	19,027	15,577	50,660	25,665	24,312	22,125
Tamarack	31,891	2,783	--	4,626	665	--	5,248	12,142	3,096	2,086	--	1,245	--	--
Oak-hickory	203,451	6,958	2,339	1,773	4,726	24,219	51,650	22,662	37,511	13,981	14,010	15,821	3,197	4,604
Elm-ash-soft maple	236,485	5,660	5,055	9,247	22,316	28,654	21,010	50,962	29,196	22,223	20,636	6,232	8,092	7,202
Maple-birch	1,826,838	20,511	22,903	40,747	88,453	311,597	313,430	250,873	113,035	114,151	89,285	163,786	105,210	192,857
Aspen	898,567	72,804	46,729	56,290	139,934	255,714	203,395	75,606	24,840	23,255	--	--	--	--
Paper birch	266,372	3,873	6,801	19,046	19,015	64,587	78,896	56,703	16,736	--	715	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	731	731	--	--	--	--	--	--	--	--	--	--	--	--
All types	4,474,076	135,523	113,470	222,899	417,036	809,277	815,064	541,044	332,538	239,995	196,178	234,281	160,732	256,039

Table 35.--Net volume of sawtimber on commercial forest land by forest type and stand-age class, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	170,788	2,138	2,230	4,988	44,058	25,944	66,262	5,430	19,738	--	--	--	--	--
Red pine	681,267	16,800	9,665	27,868	216,167	169,623	13,445	47,140	37,369	40,522	64,957	37,711	--	--
White pine	672,119	20,024	5,965	42,692	16,617	29,675	52,663	1,198	127,355	114,288	15,548	24,528	73,293	148,273
Balsam fir	340,626	14,115	4,629	11,484	31,787	55,856	108,292	23,250	23,127	21,624	6,701	19,786	12,667	7,308
White spruce	55,297	--	8,290	--	--	7,211	39,796	--	--	--	--	--	--	--
Black spruce	154,366	1,935	9,107	11,168	803	7,344	5,926	8,641	92,694	7,211	8,333	--	1,204	--
Northern white-cedar	408,268	1,820	5,417	11,925	4,530	24,398	24,171	25,813	24,927	17,230	63,868	55,325	66,788	82,056
Tamarack	33,019	3,159	--	4,005	654	--	6,402	16,408	551	560	--	1,280	--	--
Oak-hickory	479,991	19,422	4,102	5,569	15,312	26,994	68,689	51,638	120,206	36,066	51,082	52,177	9,106	19,628
Elm-ash-soft maple	516,552	14,489	6,717	8,865	27,905	48,606	37,448	112,556	65,451	60,818	64,458	18,435	28,282	22,522
Maple-birch	4,631,633	24,912	42,473	48,300	125,784	450,334	508,162	535,145	329,806	400,004	316,361	630,361	415,566	804,425
Aspen	1,351,393	100,976	57,601	65,638	184,470	301,205	327,728	165,701	78,391	69,683	--	--	--	--
Paper birch	373,361	5,216	5,701	17,172	20,993	68,745	117,442	93,440	42,838	--	1,814	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All types	9,868,680	225,006	161,897	259,674	689,080	1,215,935	1,376,426	1,086,360	962,453	768,006	593,122	839,603	606,906	1,084,212

[1/] International 1/4-inch rule.

Table 36.--Net volume of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Jack pine								
Sawtimber	32,730	--	--	--	2,105	970	2,593	3,127
Poletimber	39,982	--	--	--	--	1,813	1,360	2,844
Sapling & seedling	5,264	--	--	92	821	985	--	1,204
All stands	77,976	--	--	92	2,926	3,768	3,953	7,175
Red pine								
Sawtimber	134,422	--	--	--	978	--	--	--
Poletimber	105,610	--	--	--	--	480	--	--
Sapling & seedling	6,123	--	132	--	1,014	1,440	2,361	--
All stands	246,155	--	132	--	1,992	1,920	2,361	--
White pine								
Sawtimber	130,216	--	--	251	--	1,165	2,786	2,205
Poletimber	21,295	--	--	--	--	--	--	--
Sapling & seedling	5,919	--	--	--	--	--	2,773	--
All stands	157,430	--	--	251	--	1,165	5,559	2,205
Balsam fir								
Sawtimber	45,371	--	--	--	--	875	3,100	2,893
Poletimber	108,942	--	--	--	--	1,199	--	1,145
Sapling & seedling	22,413	104	406	1,270	1,381	2,385	4,313	4,231
All stands	176,726	104	406	1,270	1,381	4,459	7,413	8,269
White spruce								
Sawtimber	17,715	--	--	--	--	--	--	2,476
Poletimber	5,086	--	--	--	--	--	--	--
Sapling & seedling	1,326	--	--	373	--	304	649	--
All stands	24,127	--	--	373	--	304	649	2,476
Black spruce								
Sawtimber	3,413	--	369	--	--	--	--	3,044
Poletimber	62,747	--	--	1,241	--	--	2,267	4,081
Sapling & seedling	17,974	--	44	2,418	478	2,050	1,151	1,636
All stands	84,134	--	413	3,659	478	2,050	3,418	8,761
Northern white-cedar								
Sawtimber	79,240	--	--	--	--	--	--	--
Poletimber	155,750	--	--	--	--	--	--	--
Sapling & seedling	8,203	--	--	400	234	2,122	--	--
All stands	243,193	--	--	400	234	2,122	--	--

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	1,432	5,561	7,056	5,460	--	4,426	--
Poletimber	6,565	2,887	4,174	5,631	14,708	--	--
Sapling & seedling	2,162	--	--	--	--	--	--
All stands	10,159	8,448	11,230	11,091	14,708	4,426	--
Red pine							
Sawtimber	5,927	4,988	7,914	45,495	42,735	11,915	14,470
Poletimber	1,344	5,096	1,774	29,589	28,993	14,132	24,202
Sapling & seedling	--	921	255	--	--	--	--
All stands	7,271	11,005	9,943	75,084	71,728	26,047	38,672
White pine							
Sawtimber	1,678	5,941	11,055	19,825	18,753	25,202	41,355
Poletimber	2,250	1,747	5,623	2,268	9,407	--	--
Sapling & seedling	3,146	--	--	--	--	--	--
All stands	7,074	7,688	16,678	22,093	28,160	25,202	41,355
Balsam fir							
Sawtimber	2,442	5,111	6,352	6,699	10,577	--	7,322
Poletimber	4,903	5,999	1,580	19,650	41,354	13,708	19,404
Sapling & seedling	3,278	--	2,138	1,740	1,167	--	--
All stands	10,623	11,110	10,070	28,089	53,098	13,708	26,726
White spruce							
Sawtimber	--	--	--	--	--	15,239	--
Poletimber	--	2,821	--	2,265	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	2,821	--	2,265	--	15,239	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	1,400	5,069	26,432	7,736	12,069	2,452	--
Sapling & seedling	5,904	2,469	1,095	729	--	--	--
All stands	7,304	7,538	27,527	8,465	12,069	2,452	--
Northern white-cedar							
Sawtimber	--	6,216	--	10,415	7,874	22,454	32,281
Poletimber	4,570	955	2,407	9,938	17,746	55,166	64,968
Sapling & seedling	911	--	--	1,884	--	2,652	--
All stands	5,481	7,171	2,407	22,237	25,620	80,272	97,249

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	480	--	--	--	--	--	480	--
Poletimber	23,337	--	251	452	--	2,148	2,106	1,784
Sapling & seedling	8,074	--	--	--	1,408	431	794	--
All stands	31,891	--	251	452	1,408	2,579	3,380	1,784
Oak-hickory								
Sawtimber	111,578	--	--	--	1,653	--	--	3,598
Poletimber	82,017	--	--	728	--	808	1,140	1,727
Sapling & seedling	9,856	--	--	1,068	544	1,364	5,755	--
All stands	203,451	--	--	1,796	2,197	2,172	6,895	5,325
Elm-ash-soft maple								
Sawtimber	103,138	--	--	798	1,116	1,287	1,538	4,101
Poletimber	118,323	--	--	--	1,109	2,951	3,781	9,460
Sapling & seedling	15,024	--	444	1,039	1,129	2,478	2,525	1,548
All stands	236,485	--	444	1,837	3,354	6,716	7,844	15,109
Maple-birch								
Sawtimber	922,628	--	--	--	--	5,643	7,035	15,128
Poletimber	847,445	--	--	--	1,648	3,363	15,487	28,301
Sapling & seedling	56,765	--	1,136	1,349	2,734	6,349	9,438	4,571
All stands	1,826,838	--	1,136	1,349	4,382	15,355	31,960	48,000
Aspen								
Sawtimber	174,746	--	--	1,582	1,780	2,236	9,254	6,707
Poletimber	594,312	--	406	2,482	834	19,234	24,616	47,792
Sapling & seedling	129,509	992	3,753	15,601	10,940	16,164	25,248	9,374
All stands	898,567	992	4,159	19,665	13,554	37,634	59,118	63,873
Paper birch								
Sawtimber	31,804	--	--	490	--	1,646	--	--
Poletimber	217,458	--	--	--	1,030	1,883	2,572	4,825
Sapling & seedling	17,110	206	--	565	--	3,984	1,709	247
All stands	266,372	206	--	1,055	1,030	7,513	4,281	5,072
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	731	73	--	--	179	479	--	--
All types								
Sawtimber	1,787,481	--	369	3,121	7,632	13,822	26,786	43,279
Poletimber	2,382,304	--	657	4,903	4,621	33,879	53,329	101,959
Sapling & seedling	303,560	1,302	5,915	24,175	20,683	40,056	56,716	22,811
Nonstocked	731	73	--	--	179	479	--	--
All stands	4,474,076	1,375	6,941	32,199	33,115	88,236	136,831	168,049

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	1,992	7,424	2,169	5,011	--	--	--
Sapling & seedling	4,407	--	1,034	--	--	--	--
All stands	6,399	7,424	3,203	5,011	--	--	--
Oak-hickory							
Sawtimber	10,899	722	4,266	22,595	46,916	16,635	4,294
Poletimber	7,873	2,733	9,186	20,531	29,312	7,979	--
Sapling & seedling	1,125	--	--	--	--	--	--
All stands	19,897	3,455	13,452	43,126	76,228	24,614	4,294
Elm-ash-soft maple							
Sawtimber	5,791	7,999	4,212	12,277	31,290	17,831	14,898
Poletimber	11,848	12,211	3,678	20,133	47,624	5,528	--
Sapling & seedling	2,231	--	3,461	169	--	--	--
All stands	19,870	20,210	11,351	32,579	78,914	23,359	14,898
Maple-birch							
Sawtimber	27,913	59,829	51,070	218,431	350,902	148,258	38,419
Poletimber	48,245	136,685	53,159	211,278	227,710	86,416	35,153
Sapling & seedling	9,476	3,576	3,133	8,550	2,873	3,580	--
All stands	85,634	200,090	107,362	438,259	581,485	238,254	73,572
Aspen							
Sawtimber	7,755	18,907	15,941	27,491	48,183	7,206	27,704
Poletimber	52,670	68,212	65,340	103,354	146,808	45,636	16,928
Sapling & seedling	22,196	10,643	11,240	2,553	--	805	--
All stands	82,621	97,762	92,521	133,398	194,991	53,647	44,632
Paper birch							
Sawtimber	--	1,295	2,365	12,361	4,418	9,229	--
Poletimber	7,891	16,370	6,070	53,360	74,761	46,820	1,876
Sapling & seedling	4,001	2,048	1,044	840	2,466	--	--
All stands	11,892	19,713	9,479	66,561	81,645	56,049	1,876
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
All types							
Sawtimber	63,837	116,569	110,231	381,049	561,648	278,395	180,743
Poletimber	151,551	268,209	181,592	490,744	650,492	277,837	162,531
Sapling & seedling	58,837	19,657	23,400	16,465	6,506	7,037	--
Nonstocked	--	--	--	--	--	--	--
All stands	274,225	404,435	315,223	888,258	1,218,646	563,269	343,274

Table 37.--Net volume of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Jack pine								
Sawtimber	111,518	--	--	--	9,373	3,051	13,034	7,519
Poletimber	53,056	--	--	--	--	4,319	1,784	4,976
Sapling & seedling	6,214	--	--	--	1,695	3,421	--	1,098
All stands	170,788	--	--	--	11,068	10,791	14,818	13,593
Red pine								
Sawtimber	567,767	--	--	--	3,508	--	--	--
Poletimber	89,650	--	--	--	--	796	--	--
Sapling & seedling	23,850	--	702	--	2,856	7,614	9,425	--
All stands	681,267	--	702	--	6,364	8,410	9,425	--
White pine								
Sawtimber	596,027	--	--	1,198	--	6,433	14,103	9,210
Poletimber	50,103	--	--	--	--	--	--	--
Sapling & seedling	25,989	--	--	--	--	--	13,582	--
All stands	672,119	--	--	1,198	--	6,433	27,685	9,210
Balsam fir								
Sawtimber	139,316	--	--	--	--	3,010	12,075	7,899
Poletimber	172,524	--	--	--	--	2,572	--	1,315
Sapling & seedling	28,786	549	1,973	3,774	4,101	2,099	2,186	550
All stands	340,626	549	1,973	3,774	4,101	7,681	14,261	9,764
White spruce								
Sawtimber	41,622	--	--	--	--	--	--	7,211
Poletimber	8,715	--	--	--	--	--	--	--
Sapling & seedling	4,960	--	--	--	--	1,494	3,466	--
All stands	55,297	--	--	--	--	1,494	3,466	7,211
Black spruce								
Sawtimber	11,485	--	1,204	--	--	--	--	10,281
Poletimber	119,868	--	--	525	--	--	3,364	3,446
Sapling & seedling	23,013	--	--	1,160	--	4,994	805	--
All stands	154,366	--	1,204	1,685	--	4,994	4,169	13,727
Northern white-cedar								
Sawtimber	247,978	--	--	--	--	--	--	--
Poletimber	149,401	--	--	--	--	--	--	--
Sapling & seedling	10,889	--	--	--	417	5,210	--	--
All stands	408,268	--	--	--	417	5,210	--	--

[1/] International 1/4-inch rule.

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	5,430	13,994	24,685	19,726	--	14,706	--
Poletimber	8,320	3,240	5,464	7,471	17,482	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	13,750	17,234	30,149	27,197	17,482	14,706	--
Red pine							
Sawtimber	21,882	21,728	28,433	211,592	180,425	41,203	58,996
Poletimber	1,140	13,883	1,845	24,116	27,392	15,536	4,942
Sapling & seedling	--	3,253	--	--	--	--	--
All stands	23,022	38,864	30,278	235,708	207,817	56,739	63,938
White pine							
Sawtimber	8,815	26,135	42,345	81,786	74,889	123,065	208,048
Poletimber	4,103	2,374	8,200	4,805	30,621	--	--
Sapling & seedling	12,407	--	--	--	--	--	--
All stands	25,325	28,509	50,545	86,591	105,510	123,065	208,048
Balsam fir							
Sawtimber	10,021	18,863	20,687	15,926	29,584	--	21,251
Poletimber	7,305	6,179	2,153	29,261	79,783	19,615	24,341
Sapling & seedling	7,060	--	1,238	4,054	1,202	--	--
All stands	24,386	25,042	24,078	49,241	110,569	19,615	45,592
White spruce							
Sawtimber	--	--	--	--	--	34,411	--
Poletimber	--	5,385	--	3,330	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	5,385	--	3,330	--	34,411	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	2,535	4,125	79,041	8,062	18,770	--	--
Sapling & seedling	7,786	8,268	--	--	--	--	--
All stands	10,321	12,393	79,041	8,062	18,770	--	--
Northern white-cedar							
Sawtimber	--	16,106	--	29,866	23,197	82,613	96,196
Poletimber	6,714	1,213	4,530	13,920	8,932	64,926	49,166
Sapling & seedling	1,315	--	--	3,298	--	649	--
All stands	8,029	17,319	4,530	47,084	32,129	148,188	145,362

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre) 0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	1,283	--	--	--	--	--	1,283	--
Poletimber	23,918	--	1,397	878	--	--	1,280	4,472
Sapling & seedling	7,818	--	--	--	654	735	774	--
All stands	33,019	--	1,397	878	654	735	3,337	4,472
Oak-hickory								
Sawtimber	364,455	--	--	--	6,823	--	--	9,547
Poletimber	87,191	--	--	1,701	--	--	1,185	--
Sapling & seedling	28,345	--	--	2,690	2,191	4,430	15,680	--
All stands	479,991	--	--	4,391	9,014	4,430	16,865	9,547
Elm-ash-soft maple								
Sawtimber	324,164	--	--	4,472	3,923	4,845	3,099	13,373
Poletimber	167,437	--	--	--	3,031	4,216	5,196	18,972
Sapling & seedling	24,951	--	1,231	1,322	--	6,697	3,839	2,062
All stands	516,552	--	1,231	5,794	6,954	15,758	12,134	34,407
Maple-birch								
Sawtimber	3,385,483	--	--	--	--	16,835	22,444	61,256
Poletimber	1,165,448	--	--	--	2,842	2,304	12,240	36,806
Sapling & seedling	80,702	--	1,736	1,033	4,774	12,851	9,676	3,290
All stands	4,631,633	--	1,736	1,033	7,616	31,990	44,360	101,352
Aspen								
Sawtimber	516,182	--	--	5,671	5,478	9,282	31,524	17,983
Poletimber	665,847	--	980	3,901	929	34,537	25,617	46,338
Sapling & seedling	169,364	4,319	7,489	35,397	11,235	12,400	27,059	16,651
All stands	1,351,393	4,319	8,469	44,969	17,642	56,219	84,200	80,972
Paper birch								
Sawtimber	97,935	--	--	1,855	--	4,909	--	--
Poletimber	262,445	--	--	--	--	1,927	2,456	2,622
Sapling & seedling	12,981	1,176	--	3,456	--	2,180	2,523	998
All stands	373,361	1,176	--	5,311	--	9,016	4,979	3,620
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--	--
All types								
Sawtimber	6,405,215	--	1,204	13,196	29,105	48,365	97,562	144,279
Poletimber	3,015,603	--	2,377	7,005	6,802	50,671	53,122	118,947
Sapling & seedling	447,862	6,044	13,131	48,832	27,923	64,125	89,015	24,649
Nonstocked	--	--	--	--	--	--	--	--
All stands	9,868,680	6,044	16,712	69,033	63,830	163,161	239,699	287,875

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	3,719	7,161	878	4,133	--	--	--
Sapling & seedling	4,340	--	1,315	--	--	--	--
All stands	8,059	7,161	2,193	4,133	--	--	--
Oak-hickory							
Sawtimber	37,236	1,773	14,014	76,225	158,091	52,440	8,306
Poletimber	21,104	1,842	8,187	28,872	16,257	8,043	--
Sapling & seedling	3,354	--	--	--	--	--	--
All stands	61,694	3,615	22,201	105,097	174,348	60,483	8,306
Elm-ash-soft maple							
Sawtimber	13,388	23,305	11,102	41,276	105,566	62,276	37,539
Poletimber	18,681	13,087	7,280	34,294	52,191	10,489	--
Sapling & seedling	1,683	--	7,553	564	--	--	--
All stands	33,752	36,392	25,935	76,134	157,757	72,765	37,539
Maple-birch							
Sawtimber	102,322	225,145	195,260	815,313	1,258,017	538,151	150,740
Poletimber	60,023	173,914	77,639	307,661	316,654	128,172	47,193
Sapling & seedling	12,836	4,708	10,248	10,770	1,877	6,903	--
All stands	175,181	403,767	283,147	1,133,744	1,576,548	673,226	197,933
Aspen							
Sawtimber	25,736	67,150	48,390	80,495	136,801	19,111	68,561
Poletimber	61,426	68,619	73,934	123,867	160,989	43,969	20,741
Sapling & seedling	30,728	8,439	10,785	4,862	--	--	--
All stands	117,890	144,208	133,109	209,224	297,790	63,080	89,302
Paper birch							
Sawtimber	--	3,075	5,502	38,782	11,029	32,783	--
Poletimber	11,571	17,571	5,724	57,687	95,118	65,056	2,713
Sapling & seedling	1,637	--	--	1,011	--	--	--
All stands	13,208	20,646	11,226	97,480	106,147	97,839	2,713
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
All types							
Sawtimber	224,830	417,274	390,418	1,410,987	1,977,599	1,000,759	649,637
Poletimber	206,641	318,593	274,875	647,479	824,189	355,806	149,096
Sapling & seedling	83,146	24,668	31,139	24,559	3,079	7,552	--
Nonstocked	--	--	--	--	--	--	--
All stands	514,617	760,535	696,432	2,083,025	2,804,867	1,364,117	798,733

Table 38.--Net volume of sawtimber on commercial forest land by species group and butt log grade, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All grades	Log grade 1	2	3	Tie and timber
Softwoods					
Jack pine	227,227	--	2,725	224,502	--
Red pine	902,043	65,125	80,479	756,439	--
White pine	1,032,510	228,710	247,066	502,947	53,787
White spruce	223,435	--	3,249	220,186	--
Black spruce	65,215	--	--	65,215	--
Balsam fir	422,051	--	2,757	419,294	--
Hemlock	772,542	110,403	113,702	548,437	--
Tamarack	41,560	--	--	41,560	--
Northern white-cedar	510,669	7,705	38,107	464,857	--
Other softwoods	--	--	--	--	--
Total	4,197,252	411,943	488,085	3,243,437	53,787
Hardwoods					
White oak	28,737	--	16,851	11,886	--
Select red oak	565,970	136,876	174,694	247,736	6,664
Other red oak	105,416	--	4,386	66,993	34,037
Select hickory	--	--	--	--	--
Other hickory	14,715	--	7,213	7,502	--
Basswood	562,327	166,415	129,016	260,970	5,926
Beech	59,359	4,687	26,749	21,895	6,028
Yellow birch	272,974	69,994	60,211	139,279	3,490
Hard maple	1,469,909	410,529	403,855	633,035	22,490
Soft maple	351,355	24,626	75,799	250,930	--
Elm	324,027	67,046	106,756	150,225	--
Black ash	99,241	15,883	26,905	56,453	--
White & green ash	179,441	23,928	29,377	122,440	3,696
Sycamore	--	--	--	--	--
Cottonwood	30,690	--	--	30,690	--
Willow	7,351	--	--	7,351	--
Hackberry	--	--	--	--	--
Balsam poplar	64,911	26,490	24,431	13,990	--
Bigtooth aspen	276,262	567	66,817	197,467	11,411
Quaking aspen	874,391	29,312	156,450	654,588	34,041
Paper birch	301,063	15,066	47,555	227,056	11,386
Black cherry	60,306	--	15,103	45,203	--
Black walnut	--	--	--	--	--
Butternut	22,406	--	12,090	10,316	--
Other hardwoods	577	--	--	577	--
Total	5,671,428	991,419	1,384,258	3,156,582	139,169
All species	9,868,680	1,403,362	1,872,343	6,400,019	192,956

[1/] International 1/4-inch rule.

Table 39.--Net volume of short-log trees on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	854	462	279	--	113	--	--	--	--	--	--
Red pine	172	--	--	--	--	172	--	--	--	--	--
White pine	1,216	--	740	148	--	328	--	--	--	--	--
White spruce	118	--	118	--	--	--	--	--	--	--	--
Black spruce	192	192	--	--	--	--	--	--	--	--	--
Balsam fir	482	32	152	--	298	--	--	--	--	--	--
Hemlock	2,617	260	372	446	684	509	157	--	189	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	3,282	794	1,882	250	246	110	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	8,933	1,740	3,543	844	1,341	1,119	157	--	189	--	--
Hardwoods											
White oak	435	--	237	95	103	--	--	--	--	--	--
Select red oak	3,823	--	134	2,024	628	334	127	151	256	169	--
Other red oak	1,636	--	486	260	260	146	--	--	484	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	--	--	--	--	--	--	--	--	--	--	--
Basswood	1,494	--	361	362	--	472	135	--	164	--	--
Beech	1,087	--	--	--	136	372	--	163	--	416	--
Yellow birch	4,250	--	706	560	692	825	490	484	392	101	--
Hard maple	9,734	--	3,235	1,933	1,486	1,507	671	239	472	191	--
Soft maple	4,446	--	961	1,270	802	473	468	--	472	--	--
Elm	3,785	--	494	1,171	1,034	771	184	--	--	131	--
Black ash	312	--	312	--	--	--	--	--	--	--	--
White & green ash	63	--	--	--	--	63	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	721	--	281	292	--	148	--	--	--	--	--
Quaking aspen	2,204	--	641	1,294	269	--	--	--	--	--	--
Paper birch	2,020	--	869	603	398	--	150	--	--	--	--
Black cherry	1,428	--	145	1,145	--	138	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	37,438	--	8,862	11,009	5,808	5,249	2,225	1,037	2,240	1,008	--
All species	46,371	1,740	12,405	11,853	7,149	6,368	2,382	1,037	2,429	1,008	--

Table 40.--Net volume of short-log trees on commercial forest land by species group and diameter class, Northeast Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 38.9	39.0+
Softwoods											
Jack pine	2,909	1,566	948	--	395	--	--	--	--	--	--
Red pine	692	--	--	--	--	692	--	--	--	--	--
White pine	3,990	--	2,333	477	--	1,180	--	--	--	--	--
White spruce	518	--	518	--	--	--	--	--	--	--	--
Black spruce	494	494	--	--	--	--	--	--	--	--	--
Balsam fir	1,367	74	402	--	891	--	--	--	--	--	--
Hemlock	6,434	514	825	1,090	1,729	1,334	421	--	521	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	11,322	2,613	6,517	891	893	408	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	27,726	5,261	11,543	2,458	3,908	3,614	421	--	521	--	--
Hardwoods											
White oak	1,185	--	661	258	266	--	--	--	--	--	--
Select red oak	8,446	--	294	4,414	1,387	732	286	342	596	395	--
Other red oak	3,690	--	1,069	573	586	334	--	--	1,128	--	--
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	--	--	--	--	--	--	--	--	--	--	--
Basswood	3,177	--	755	745	--	1,016	297	--	364	--	--
Beech	2,873	--	--	--	371	964	--	424	--	1,114	--
Yellow birch	10,171	--	1,406	1,251	1,633	2,023	1,244	1,256	1,073	285	--
Hard maple	23,048	--	7,288	4,520	3,541	3,690	1,668	605	1,227	509	--
Soft maple	12,174	--	2,832	3,588	2,144	1,239	1,194	--	1,177	--	--
Elm	9,356	--	1,137	2,852	2,573	1,959	471	--	--	364	--
Black ash	1,008	--	1,008	--	--	--	--	--	--	--	--
White & green ash	185	--	--	--	--	185	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	1,154	--	421	481	--	252	--	--	--	--	--
Quaking aspen	4,928	--	1,319	2,965	644	--	--	--	--	--	--
Paper birch	5,516	--	2,339	1,617	1,124	--	436	--	--	--	--
Black cherry	3,914	--	393	3,174	--	347	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	90,825	--	20,922	26,438	14,269	12,741	5,596	2,627	5,565	2,667	--
All species	118,551	5,261	32,465	28,896	18,177	16,355	6,017	2,627	6,086	2,667	--

[1/] International 1/4-inch rule.

Table 41.--Net annual growth of growing stock on commercial forest land by softwoods and hardwoods, Northeast Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967[1/]	1982
Softwoods	44,700	48,779
Hardwoods	85,700	89,427
All species	130,400	138,206

[1/] Figures have been adjusted from those published after the 1968 survey to conform to 1982 volumes because of changes in survey procedures.

Table 42.--Net annual growth of growing stock on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	4,081	17	--	45	277	209	1,221	369	590	253	1,100
Red pine	13,113	529	890	167	1,695	34	2,863	2,051	2,167	1,127	1,590
White pine	5,033	215	212	104	158	842	843	477	866	370	946
White spruce	3,553	340	1,220	224	100	9	923	108	451	59	119
Black spruce	2,656	74	475	226	155	256	193	--	860	67	350
Balsam fir	9,621	647	1,304	1,616	1,581	23	1,338	245	1,731	270	866
Hemlock	1,900	239	468	56	96	501	138	76	80	131	115
Tamarack	1,004	65	48	262	35	-2	259	71	2	146	118
Northern white-cedar	7,818	253	954	504	97	602	2,094	1,200	613	1,171	330
Other softwoods	--	--	--	--	--	--	--	--	--	--	
Total	48,779	2,379	5,571	3,204	4,194	2,474	9,872	4,597	7,360	3,594	5,534
Hardwoods											--
White oak	133	--	--	2	2	42	52	-4	--	21	18
Select red oak	5,502	269	77	205	400	616	1,411	814	580	437	693
Other red oak	-251	-5	--	-12	--	41	-397	75	-14	64	-3
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	492	--	--	19	2	87	60	5	--	319	--
Basswood	8,458	648	2,298	1,943	518	495	802	686	221	654	193
Beech	197	--	18	-	--	-13	13	141	--	38	--
Yellow birch	807	143	272	184	50	9	19	19	31	117	-37
Hard maple	20,074	1,635	4,854	3,517	1,156	1,188	1,877	908	1,408	1,300	2,231
Soft maple	12,592	275	512	1,140	1,279	479	3,542	1,308	2,146	673	1,238
Elm	584	1	-626	382	180	-129	197	274	78	213	14
Black ash	2,493	-13	264	133	196	-16	585	376	230	566	172
White & green ash	2,385	29	347	193	306	152	281	609	17	431	20
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	398	--	--	2	--	--	16	354	--	26	--
Willow	35	--	--	--	--	--	10	7	--	18	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	450	27	229	20	--	-5	201	37	-22	-37	--
Bigtooth aspen	4,457	269	50	303	239	283	1,286	1,101	248	87	591
Quaking aspen	17,069	1,650	2,354	2,389	2,442	447	2,372	1,374	2,374	259	1,408
Paper birch	11,710	500	1,529	916	1,267	179	2,116	1,013	2,326	213	1,651
Black cherry	1,757	43	845	218	240	-14	217	44	32	113	19
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	83	--	20	--	--	-1	3	28	--	33	--
Other hardwoods	2	--	--	--	--	2	--	--	--	--	--
Total	89,427	5,471	13,043	11,554	8,277	3,842	14,663	9,169	9,655	5,545	8,208
All species	138,206	7,850	18,614	14,758	12,471	6,316	24,535	13,766	17,015	9,139	13,742

Table 43.--Net annual growth of sawtimber on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	14,570	71	--	183	520	401	5,993	630	1,784	1,569	3,419
Red pine	49,511	2,879	6,275	1,099	1,617	247	4,619	12,523	10,069	2,761	7,422
White pine	25,274	1,065	1,261	377	746	4,665	3,999	3,102	3,757	1,640	4,662
White spruce	12,294	1,572	4,471	750	571	61	1,985	576	1,371	348	589
Black spruce	3,105	191	453	473	143	248	80	--	1,100	7	410
Balsam fir	27,430	1,324	6,819	3,650	3,741	-10	3,366	916	5,144	468	2,012
Hemlock	9,082	1,195	2,409	426	471	2,272	633	358	428	297	593
Tamarack	1,785	84	65	130	135	50	154	682	192	151	142
Northern white-cedar	20,417	981	2,611	1,650	127	1,532	4,896	2,663	2,432	2,529	996
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	163,468	9,362	24,364	8,738	8,071	9,466	25,725	21,450	26,277	9,770	20,245
Hardwoods											
White oak	445	--	--	--	--	77	169	-18	--	170	47
Select red oak	21,591	1,417	290	810	1,077	4,244	2,993	685	4,288	2,965	2,822
Other red oak	4,530	560	--	--	--	452	2,221	168	508	602	19
Select hickory	--	--	--	--	--	--	--	--	--	--	--
Other hickory	528	--	--	--	9	165	6	25	--	323	--
Basswood	26,460	2,799	7,364	4,609	2,029	1,997	1,895	889	1,334	2,377	1,167
Beech	162	--	83	--	--	-32	-2	-57	--	170	--
Yellow birch	1,704	1,009	624	369	233	-736	55	146	58	189	-243
Hard maple	44,631	2,939	10,917	6,596	2,641	3,874	2,844	564	1,319	7,990	4,947
Soft maple	16,033	393	1,412	1,408	1,076	638	3,423	2,057	2,200	1,381	2,045
Elm	6,322	-143	729	1,511	670	-279	943	1,152	312	1,279	148
Black ash	3,832	5	318	287	1,374	-82	271	306	238	1,088	27
White & green ash	9,304	178	2,934	1,468	382	138	602	2,217	44	1,275	66
Sycamore	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	1,776	--	--	10	--	--	80	1,457	--	229	--
Willow	132	--	--	--	--	--	9	10	--	113	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	1,087	62	269	-1	--	-63	787	75	-70	28	--
Bigtooth aspen	13,273	491	32	2,035	434	586	2,449	4,882	613	274	1,477
Quaking aspen	53,832	5,666	8,959	5,426	8,629	688	7,069	4,140	5,403	1,415	6,437
Paper birch	20,415	1,056	3,463	723	1,444	248	3,334	1,617	3,286	1,579	3,665
Black cherry	2,282	94	762	600	59	147	117	126	--	355	22
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	715	--	170	--	--	-16	13	282	--	266	--
Other hardwoods	9	--	--	--	--	9	--	--	--	--	--
Total	229,063	16,526	38,326	25,851	20,057	12,055	29,278	20,723	19,533	24,068	22,646
All species	392,531	25,888	62,690	34,589	28,128	21,521	55,003	42,173	45,810	33,838	42,891

[1/] International 1/4-inch rule.

Table 44.--Net annual growth of growing stock on commercial forest land by ownership class and softwoods and hardwoods, Northeast Unit, Wisconsin, 1982

(In thousand cubic feet)

Ownership class	All species	Softwoods	Hardwoods
National Forest	20,150	6,174	13,976
Miscellaneous federal	58	32	26
State	7,316	3,724	3,592
County and municipal	23,268	9,674	13,594
Indian	7,867	2,952	4,915
Forest industry	18,133	5,761	12,372
Farmer	12,152	3,609	8,543
Misc. private-corp.	6,206	1,839	4,367
Misc. private-indiv.	43,056	15,014	28,042
All owners	138,206	48,779	89,427

Table 45.--Net annual growth of growing stock on commercial forest land by species group and type, Northeast Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	4,081	2,741	477	170	1	--	-11	30
Red pine	13,113	287	10,281	667	29	--	66	3
White pine	5,033	61	323	2,105	129	16	79	31
White spruce	3,553	--	74	-6	662	941	--	58
Black spruce	2,656	11	19	-8	474	--	1,428	312
Balsam fir	9,621	--	131	51	2,713	25	808	-109
Hemlock	1,900	--	7	51	36	3	3	65
Tamarack	1,004	--	--	-6	-10	--	130	123
Northern white-cedar	7,818	--	2	26	787	--	78	4,877
Other softwoods	--	--	--	--	--	--	--	--
Total	48,779	3,100	11,314	3,050	4,821	985	2,581	5,390
Hardwoods								
White oak	133	--	--	12	--	--	--	--
Select red oak	5,502	3	36	35	4	--	8	4
Other red oak	-251	-110	-156	5	-14	--	--	2
Select hickory	--	--	--	--	--	--	--	--
Other hickory	492	--	--	--	--	--	--	5
Basswood	8,458	--	--	-4	--	19	--	--
Beech	197	--	--	--	--	--	--	--
Yellow birch	807	--	--	--	6	--	3	134
Hard maple	20,074	--	34	8	24	6	1	--
Soft maple	12,592	6	30	217	171	--	17	7
Elm	584	--	95	-27	11	-3	--	-33
Black ash	2,493	--	--	5	191	--	--	-7
White & green ash	2,385	--	37	--	--	--	--	4
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	398	--	--	321	--	--	--	--
Willow	35	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	450	--	--	--	40	11	7	-14
Bigtooth aspen	4,457	66	42	10	29	--	-25	41
Quaking aspen	17,069	29	502	254	426	436	438	21
Paper birch	11,710	42	47	113	340	--	59	234
Black cherry	1,757	--	6	--	11	3	149	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	83	--	--	--	--	--	--	--
Other hardwoods	2	--	--	--	--	--	--	--
Total	89,427	36	673	949	1,239	472	657	398
All species	138,206	3,136	11,987	3,999	6,060	1,457	3,238	5,788

(Table 45 continued on next page)

(Table 45 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	98	--	36	534	-14	--	19
Red pine	3	326	--	171	1,052	220	--	8
White pine	70	108	226	1,122	568	194	--	1
White spruce	1	--	91	315	1,195	222	--	--
Black spruce	119	--	25	60	178	24	--	14
Balsam fir	44	5	981	1,593	2,814	560	--	5
Hemlock	-7	3	162	1,524	46	7	--	--
Tamarack	603	6	10	113	16	19	--	--
Northern white-cedar	28	--	949	618	319	134	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	861	546	2,444	5,552	6,722	1,366	--	47
Hardwoods								
White oak	--	54	18	20	29	--	--	--
Select red oak	-3	2,304	35	1,513	1,070	493	--	--
Other red oak	--	144	23	-24	-100	-29	--	8
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	247	--	230	10	--	--	--
Basswood	--	90	160	7,755	362	76	--	--
Beech	--	8	11	178	--	--	--	--
Yellow birch	--	--	52	536	25	51	--	--
Hard maple	--	223	77	17,586	1,876	239	--	--
Soft maple	23	477	1,293	5,036	4,074	1,241	--	--
Elm	--	20	221	193	82	25	--	--
Black ash	--	--	1,879	225	204	-4	--	--
White & green ash	--	29	516	1,650	119	30	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	26	16	35	--	--	--
Willow	--	--	25	8	--	2	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	-9	--	52	-7	308	62	--	--
Bigtooth aspen	-7	163	24	486	3,447	181	--	--
Quaking aspen	7	186	326	2,410	11,291	759	--	-16
Paper birch	78	275	243	2,056	4,306	3,917	--	--
Black cherry	--	-16	9	684	863	48	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	-11	--	54	40	--	--	--
Other hardwoods	--	--	--	2	--	--	--	--
Total	89	4,193	4,990	40,607	28,041	7,091	--	-8
All species	950	4,739	7,434	46,159	34,763	8,457	--	39

Table 46.--Net annual growth of sawtimber on commercial forest land by species group and type, Northeast Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	14,570	9,829	498	712	12	--	-72	--
Red pine	49,511	544	37,811	2,208	165	--	386	14
White pine	25,274	164	1,710	10,821	650	94	198	74
White spruce	12,294	--	451	133	1,722	4,187	--	63
Black spruce	3,105	487	--	-109	447	--	748	882
Balsam fir	27,430	--	131	69	6,125	108	3,644	1,207
Hemlock	9,082	--	35	341	209	15	26	202
Tamarack	1,785	--	--	--	215	--	34	91
Northern white-cedar	20,417	--	10	89	2,312	--	142	9,196
Other softwoods	--	--	--	--	--	--	--	--
Total	163,468	11,024	40,646	14,264	11,857	4,404	5,106	11,729
Hardwoods								
White oak	445	--	--	11	--	--	--	--
Select red oak	21,591	14	72	130	13	--	62	19
Other red oak	4,530	94	94	17	--	--	--	12
Select hickory	--	--	--	--	--	--	--	--
Other hickory	528	--	--	--	--	--	--	25
Basswood	26,460	--	--	-26	--	--	--	--
Beech	162	--	--	--	--	--	--	--
Yellow birch	1,704	--	3	--	29	--	16	146
Hard maple	44,631	--	8	--	61	33	6	--
Soft maple	16,033	--	--	281	82	--	97	-364
Elm	6,322	--	--	-62	73	-11	--	-14
Black ash	3,832	--	--	--	306	--	--	-90
White & green ash	9,304	--	639	--	--	--	--	17
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	1,776	--	--	1,275	--	--	--	--
Willow	132	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	1,087	--	--	--	8	50	--	-61
Bigtooth aspen	13,273	401	147	76	18	--	-87	65
Quaking aspen	53,832	374	1,419	1,164	1,074	286	1,228	-34
Paper birch	20,415	97	163	670	241	--	181	223
Black cherry	2,282	--	--	--	78	94	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	715	--	--	--	--	--	--	--
Other hardwoods	9	--	--	--	--	--	--	--
Total	229,063	980	2,545	3,536	1,983	452	1,503	-56
All species	392,531	12,004	43,191	17,800	13,840	4,856	6,609	11,673

[1/] International 1/4-inch rule.

(Table 46 continued on next page)

(Table 46 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	294	--	164	3,057	-37	--	113
Red pine	16	1,161	--	1,420	4,233	1,508	--	45
White pine	240	567	818	6,293	2,821	819	--	5
White spruce	5	--	283	1,321	3,556	573	--	--
Black spruce	283	--	22	86	171	--	--	88
Balsam fir	13	43	1,999	4,866	7,822	1,403	--	--
Hemlock	-28	18	641	7,364	220	39	--	--
Tamarack	410	38	95	181	696	25	--	--
Northern white-cedar	590	--	3,759	3,282	719	318	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	1,529	2,121	7,617	24,977	23,295	4,648	--	251
Hardwoods								
White oak	--	133	170	55	76	--	--	--
Select red oak	15	7,460	70	6,551	4,829	2,356	--	--
Other red oak	--	2,417	79	720	1,097	--	--	--
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	--	--	503	--	--	--	--
Basswood	--	301	887	24,555	529	214	--	--
Beech	--	--	15	147	--	--	--	--
Yellow birch	--	--	129	1,416	-51	16	--	--
Hard maple	--	293	324	42,699	1,037	170	--	--
Soft maple	96	472	2,293	8,349	3,288	1,439	--	--
Elm	--	--	1,147	4,751	427	11	--	--
Black ash	--	--	3,120	479	17	--	--	--
White & green ash	--	138	2,597	5,357	450	106	--	--
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	229	80	192	--	--	--
Willow	--	--	122	--	--	10	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	212	46	832	--	--	--
Bigtooth aspen	-52	686	61	1,769	9,469	720	--	--
Quaking aspen	63	395	1,174	11,666	33,175	1,848	--	--
Paper birch	33	320	1,221	7,934	4,242	5,090	--	--
Black cherry	--	31	16	1,266	797	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	--	--	379	336	--	--	--
Other hardwoods	--	--	--	9	--	--	--	--
Total	155	12,646	13,866	118,731	60,742	11,980	--	--
All species	1,684	14,767	21,483	143,708	84,037	16,628	--	251

Table 47.--Net annual growth of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Northeast Unit, Wisconsin, 1982

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	869	--	--	--	46	33	91	78	25	182	151	154	--	109	--
Poletimber	1,846	--	--	--	--	379	-48	204	214	178	122	254	543	--	--
Sapling & seedling	421	--	--	7	38	45	--	234	97	--	--	--	--	--	--
All stands	3,136	--	--	7	84	457	43	516	336	360	273	408	543	109	--
Red pine															
Sawtimber	4,740	--	--	--	27	--	--	--	489	320	251	1,506	1,504	431	212
Poletimber	6,706	--	--	--	--	16	--	--	246	300	214	2,498	1,425	906	1,101
Sapling & seedling	541	--	8	--	162	65	106	--	--	60	140	--	--	--	--
All stands	11,987	--	8	--	189	81	106	--	735	680	605	4,004	2,929	1,337	1,313
White pine															
Sawtimber	2,702	--	--	9	--	38	111	76	66	90	77	706	542	434	553
Poletimber	1,067	--	--	--	--	--	--	--	97	86	267	120	497	--	--
Sapling & seedling	230	--	--	--	--	--	121	--	109	--	--	--	--	--	--
All stands	3,999	--	--	9	--	38	232	76	272	176	344	826	1,039	434	553
Balsam fir															
Sawtimber	1,078	--	--	--	--	47	80	85	35	143	165	203	194	--	126
Poletimber	3,422	--	--	--	--	38	--	49	300	204	33	402	1,322	496	578
Sapling & seedling	1,560	37	64	37	67	78	320	201	239	--	267	203	47	--	--
All stands	6,060	37	64	37	67	163	400	335	574	347	465	808	1,563	496	704
White spruce															
Sawtimber	1,117	--	--	--	--	--	--	195	--	--	--	--	--	922	--
Poletimber	299	--	--	--	--	--	--	--	--	156	--	143	--	--	--
Sapling & seedling	41	--	--	12	--	9	20	--	--	--	--	--	--	--	--
All stands	1,457	--	--	12	--	9	20	195	--	156	--	143	--	922	--
Black spruce															
Sawtimber	109	--	69	--	--	--	--	40	--	--	--	--	--	--	--
Poletimber	2,245	--	--	26	--	--	48	242	54	140	997	232	390	116	--
Sapling & seedling	884	--	3	148	119	141	35	75	137	148	43	35	--	--	--
All stands	3,238	--	72	174	119	141	83	357	191	288	1,040	267	390	116	--
Northern white-cedar															
Sawtimber	1,282	--	--	--	--	--	--	--	--	91	--	274	257	294	366
Poletimber	4,047	--	--	--	--	--	--	--	184	29	94	408	619	1,435	1,278
Sapling & seedling	459	--	--	26	11	134	--	--	29	--	--	72	--	187	--
All stands	5,788	--	--	26	11	134	--	--	213	120	94	754	876	1,916	1,644

(Table 47 continued on next page)

(Table 47 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	8	--	--	--	--	--	8	--	--	--	--	--	--	--	--
Poletimber	794	--	11	3	--	65	21	47	18	187	25	417	--	--	--
Sapling & seedling	148	--	--	--	93	-2	-18	--	48	--	27	--	--	--	--
All stands	950	--	11	3	93	63	11	47	66	187	52	417	--	--	--
Oak-hickory															
Sawtimber	2,020	--	--	--	-13	--	--	129	363	13	94	408	679	268	79
Poletimber	2,447	--	--	-13	--	39	-8	86	231	15	293	803	842	159	--
Sapling & seedling	272	--	9	83	9	50	94	--	27	--	--	--	--	--	--
All stands	4,739	--	9	70	-4	89	86	215	621	28	387	1,211	1,521	427	79
Elm-ash-soft maple															
Sawtimber	1,756	--	--	23	44	19	52	83	202	158	109	253	342	329	142
Poletimber	4,673	--	--	--	33	170	152	281	272	490	174	1,370	1,662	69	--
Sapling & seedling	1,005	--	23	44	63	150	200	63	185	--	285	-8	--	--	--
All stands	7,434	--	23	67	140	339	404	427	659	648	568	1,615	2,004	398	142
Maple-birch															
Sawtimber	15,562	--	--	--	--	177	394	346	268	773	1,063	4,055	6,072	2,234	180
Poletimber	27,577	--	--	--	36	155	837	1,633	1,718	4,667	2,188	7,179	6,495	1,909	760
Sapling & seedling	3,020	--	306	185	240	308	672	144	558	86	93	262	47	119	--
All stands	46,159	--	306	185	276	640	1,903	2,123	2,544	5,526	3,344	11,496	12,614	4,262	940
Aspen															
Sawtimber	4,338	--	--	46	43	52	111	222	431	417	530	595	1,111	216	564
Poletimber	20,968	--	15	57	45	540	1,079	2,000	2,085	2,479	2,515	3,734	4,692	1,352	375
Sapling & seedling	9,457	665	198	1,260	1,079	1,337	1,761	554	991	745	723	94	--	50	--
All stands	34,763	665	213	1,363	1,167	1,929	2,951	2,776	3,507	3,641	3,768	4,423	5,803	1,618	939
Paper birch															
Sawtimber	757	--	--	14	--	36	--	--	--	39	87	331	117	133	--
Poletimber	6,857	--	--	--	87	97	291	178	229	636	136	1,768	2,394	1,031	10
Sapling & seedling	843	5	--	58	--	307	34	14	144	66	61	43	111	--	--
All stands	8,457	5	--	72	87	440	325	192	373	741	284	2,142	2,622	1,164	10
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	39	34	--	--	-16	21	--	--	--	--	--	--	--	--	--
All types															
Sawtimber	36,338	-	69	92	147	402	847	1,254	1,879	2,226	2,527	8,485	10,818	5,370	2,222
Poletimber	82,948	-	26	73	201	1,499	2,372	4,720	5,648	9,567	7,058	19,328	20,881	7,473	4,102
Sapling & seedling	18,881	707	611	1,860	1,881	2,622	3,345	1,285	2,564	1,105	1,639	701	205	356	--
Nonstocked	39	34	--	--	-16	21	--	--	--	--	--	--	--	--	--
All stands	138,206	741	706	2,025	2,213	4,544	6,564	7,259	10,091	12,898	11,224	28,514	31,904	13,199	6,324

Table 48.--Net annual growth of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Northeast Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	4,536	--	--	--	470	87	757	102	127	441	1,279	833	--	440	--
Poletimber	5,686	--	--	--	--	649	64	854	751	125	1,855	434	954	--	--
Sapling & seedling	1,782	--	--	--	546	690	--	546	--	--	--	--	--	--	--
All stands	12,004	--	--	--	1,016	1,426	821	1,502	878	566	3,134	1,267	954	440	--
Red pine															
Sawtimber	30,734	--	--	--	170	--	--	--	3,386	1,502	1,225	10,656	11,063	1,478	1,254
Poletimber	10,881	--	--	--	--	53	--	--	18	925	82	3,677	4,578	1,168	380
Sapling & seedling	1,576	--	38	--	589	342	429	--	--	178	--	--	--	--	--
All stands	43,191	--	38	--	759	395	429	--	3,404	2,605	1,307	14,333	15,641	2,646	1,634
White pine															
Sawtimber	14,302	--	--	80	--	223	609	413	445	508	776	3,525	1,748	2,707	3,268
Poletimber	2,504	--	--	--	--	--	--	--	198	86	272	135	1,813	--	--
Sapling & seedling	994	--	--	--	--	--	645	--	349	--	--	--	--	--	--
All stands	17,800	--	--	80	--	223	1,254	413	992	594	1,048	3,660	3,561	2,707	3,268
Balsam fir															
Sawtimber	4,884	--	--	--	--	143	440	367	286	864	732	808	954	--	290
Poletimber	7,521	--	--	--	--	55	--	61	342	273	44	1,142	4,048	764	792
Sapling & seedling	1,435	226	80	458	177	101	64	44	124	--	47	106	8	--	--
All stands	13,840	226	80	458	177	299	504	472	752	1,137	823	2,056	5,010	764	1,082
White spruce															
Sawtimber	4,183	--	--	--	--	--	--	718	--	--	--	--	--	3,465	--
Poletimber	440	--	--	--	--	--	--	--	--	346	--	94	--	--	--
Sapling & seedling	233	--	--	--	--	46	187	--	--	--	--	--	--	--	--
All stands	4,856	--	--	--	--	46	187	718	--	346	--	94	--	3,465	--
Black spruce															
Sawtimber	175	--	34	--	--	--	--	141	--	--	--	--	--	--	--
Poletimber	5,880	--	--	38	--	--	109	-58	181	180	4,366	392	672	--	--
Sapling & seedling	554	--	--	16	--	145	62	--	18	313	--	--	--	--	--
All stands	6,609	--	34	54	--	145	171	83	199	493	4,366	392	672	--	--
Northern white-cedar															
Sawtimber	5,851	--	--	--	--	--	--	--	--	56	--	1,086	770	2,450	1,489
Poletimber	5,510	--	--	--	--	--	--	--	271	94	101	986	225	2,894	939
Sapling & seedling	312	--	--	--	12	110	--	--	94	--	--	50	--	46	--
All stands	11,673	--	--	--	12	110	--	--	365	150	101	2,122	995	5,390	2,428

[1/] International 1/4-inch rule.

(Table 48 continued on next page)

(Table 48 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	58	--	--	--	--	--	58	--	--	--	--	--	--	--	--
Poletimber	1,576	--	100	22	--	--	92	154	266	290	15	637	--	--	--
Sapling & seedling	50	--	--	--	6	49	-51	--	1	--	45	--	--	--	--
All stands	1,684	--	100	22	6	49	99	154	267	290	60	637	--	--	--
Oak-hickory															
Sawtimber	9,024	--	--	--	216	--	--	521	936	46	344	2,120	3,657	743	441
Poletimber	4,194	--	--	37	--	--	13	--	1,669	11	434	1,406	373	251	--
Sapling & seedling	1,549	--	--	385	551	214	287	--	112	--	--	--	--	--	--
All stands	14,767	--	--	422	767	214	300	521	2,717	57	778	3,526	4,030	994	441
Elm-ash-soft maple															
Sawtimber	11,405	--	--	96	97	248	82	1,442	1,066	695	1,610	1,454	1,992	1,915	708
Poletimber	7,400	--	--	--	189	236	166	1,124	1,220	383	289	1,339	2,340	114	--
Sapling & seedling	2,678	--	23	27	--	65	1,116	138	498	--	802	9	--	--	--
All stands	21,483	--	23	123	286	549	1,364	2,704	2,784	1,078	2,701	2,802	4,332	2,029	708
Maple-birch															
Sawtimber	82,421	--	--	--	--	2,158	943	2,950	1,844	6,411	6,454	21,963	29,930	9,127	641
Poletimber	52,781	--	--	--	73	54	1,520	4,039	2,699	8,846	5,975	13,510	11,242	3,773	1,050
Sapling & seedling	8,506	--	41	1,087	186	980	2,188	141	758	920	1,462	459	34	250	--
All stands	143,708	--	41	1,087	259	3,192	4,651	7,130	5,301	16,177	13,891	35,932	41,206	13,150	1,691
Aspen															
Sawtimber	22,295	--	--	150	392	550	1,371	883	979	3,483	2,879	3,291	5,033	282	3,002
Poletimber	45,066	--	70	253	66	2,197	1,415	4,388	7,353	5,475	6,030	5,364	9,164	2,060	1,231
Sapling & seedling	16,676	1,643	530	4,091	2,664	2,109	1,079	888	2,614	230	543	285	--	--	--
All stands	84,037	1,643	600	4,494	3,122	4,856	3,865	6,159	10,946	9,188	9,452	8,940	14,197	2,342	4,233
Paper birch															
Sawtimber	3,813	--	--	97	--	251	--	--	--	220	352	1,672	337	884	--
Poletimber	11,414	--	--	--	102	134	59	129	431	807	174	2,149	4,880	2,460	89
Sapling & seedling	1,401	544	--	451	--	236	44	71	34	--	--	21	--	--	--
All stands	16,628	544	--	548	102	621	103	200	465	1,027	526	3,842	5,217	3,344	89
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	251	251	--	--	--	--	--	--	--	--	--	--	--	--	--
All types															
Sawtimber	193,681	--	34	423	1,345	3,660	4,260	7,537	9,069	14,226	15,651	47,408	55,484	23,491	11,093
Poletimber	160,853	--	170	350	430	3,378	3,438	10,691	15,399	17,841	19,637	31,265	40,289	13,484	4,481
Sapling & seedling	37,746	2,413	712	6,515	4,731	5,087	6,050	1,828	4,602	1,641	2,899	930	42	296	--
Nonstocked	251	251	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	392,531	2,664	916	7,288	6,506	12,125	13,748	20,056	29,070	33,708	38,187	79,603	95,815	37,271	15,574

Table 49.--Timber removals from growing stock on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	3,216	30	--	24	108	190	1,192	617	516	80	459
Red pine	5,143	219	498	330	398	23	851	891	949	448	536
White pine	3,073	105	177	40	199	750	340	192	570	164	536
White spruce	1,235	203	564	34	27	--	224	44	96	--	43
Black spruce	875	39	212	47	41	--	91	--	307	1	137
Balsam fir	6,388	420	1,789	496	264	--	957	145	1,736	13	568
Hemlock	3,871	187	350	89	48	1,781	276	151	74	135	780
Tamarack	125	13	10	10	21	--	26	--	40	3	2
Northern white-cedar	834	2	145	15	1	3	175	32	51	404	6
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	24,760	1,218	3,745	1,085	1,107	2,747	4,132	2,072	4,339	1,248	3,067
Hardwoods											
White oak	230	--	--	14	1	15	128	13	--	32	27
Select red oak	3,416	107	148	198	389	183	647	159	635	588	362
Other red oak	557	17	--	--	--	21	328	27	26	132	6
Hickory	164	--	--	18	6	14	--	--	--	126	--
Basswood	2,668	264	697	322	357	290	187	104	123	288	36
Beech	225	--	--	--	--	43	28	41	--	113	--
Yellow birch	1,449	169	310	149	116	143	74	87	154	115	132
Hard maple	10,085	741	2,331	1,607	915	623	766	340	843	1,053	866
Soft maple	3,879	99	359	352	504	322	737	600	452	277	177
Elm	5,894	375	1,515	733	403	996	277	422	213	773	187
Ash	1,586	34	191	251	265	159	154	70	140	271	51
Cottonwood	13	--	--	--	--	--	1	7	--	5	--
Balsam poplar	90	13	32	--	--	--	28	17	--	--	--
Bigtooth aspen	8,296	253	115	537	328	574	2,582	1,337	1,044	258	1,268
Quaking aspen	32,353	2,529	5,527	3,128	3,776	1,086	6,062	1,725	4,922	894	2,704
Paper birch	6,710	320	953	439	622	55	766	481	1,747	109	1,218
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods[1/]	321	6	44	48	14	17	62	4	55	55	16
Total	77,936	4,927	12,222	7,796	7,696	4,541	12,827	5,434	10,354	5,089	7,050
All species	102,696	6,145	15,967	8,881	8,803	7,288	16,959	7,506	14,693	6,337	10,117

[1/] Includes black cherry and butternut

Table 50.--Timber removals from sawtimber on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	4,581	37	--	48	146	232	1,388	819	964	99	848
Red pine	13,098	463	1,123	743	1,152	60	1,884	1,906	2,900	1,026	1,841
White pine	14,046	444	903	213	721	4,051	1,734	417	2,373	831	2,359
White spruce	2,497	249	769	84	87	--	495	111	457	6	239
Black spruce	730	27	159	51	27	2	83	--	233	1	147
Balsam fir	10,778	627	2,888	815	431	--	1,579	304	3,165	32	937
Hemlock	10,764	667	1,319	417	109	5,697	1,216	313	212	612	202
Tamarack	174	20	17	16	37	--	14	--	62	5	3
Northern white-cedar	2,043	11	323	60	3	13	380	130	197	903	23
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	58,711	2,545	7,501	2,447	2,713	10,055	8,773	4,000	10,563	3,515	6,599
Hardwoods											
White oak	793	--	--	--	--	42	485	60	--	129	77
Select red oak	12,002	368	513	774	1,434	789	1,654	509	2,272	2,481	1,208
Other red oak	2,049	64	--	--	--	89	1,252	163	56	399	26
Hickory	477	--	--	--	27	39	--	--	--	411	--
Basswood	8,337	431	1,328	1,122	887	1,390	878	474	372	1,365	90
Beech	932	--	--	--	--	210	125	56	--	541	--
Yellow birch	5,004	644	1,173	410	303	630	308	374	422	260	480
Hard maple	37,084	2,516	7,968	5,479	3,129	2,917	3,018	1,577	2,859	4,602	3,019
Soft maple	9,750	236	868	969	1,267	670	1,843	1,195	1,138	1,058	506
Elm	21,501	956	5,172	2,356	1,374	4,246	890	1,847	892	2,979	789
Ash	4,028	101	312	675	665	143	375	278	321	1,034	124
Cottonwood	57	--	--	--	--	--	5	29	--	23	--
Balsam poplar	218	--	1	--	--	--	135	80	--	2	--
Bigtooth aspen	24,430	929	121	2,485	898	1,403	5,675	5,050	3,180	1,069	3,620
Quaking aspen	81,457	5,131	15,579	7,015	9,319	2,363	15,625	4,670	12,490	2,144	7,121
Paper birch	9,109	275	1,019	604	1,011	39	1,286	1,102	2,047	298	1,428
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods[2/]	654	24	112	117	34	55	30	15	--	215	52
Total	217,882	11,675	34,166	22,006	20,348	15,025	33,584	17,479	26,049	19,010	18,540
All species	276,593	14,220	41,667	24,453	23,061	25,080	42,357	21,479	36,612	22,525	25,139

[1/] International 1/4-inch rule.

[2/] Includes black cherry and butternut.

Table 51.--Growing-stock average annual removals on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1968-1982

(In thousand cubic feet per year)

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	2,166	--	--	--	--	--	935	--	1,097	--	134
Red pine	3,245	--	582	92	383	--	160	--	1,832	--	196
White pine	2,688	82	468	--	--	965	123	126	641	103	180
White spruce	1,151	234	640	75	--	3	92	--	107	--	--
Black spruce	466	48	53	--	--	--	86	--	279	--	--
Balsam fir	4,949	100	1,309	435	208	--	1,115	70	1,565	26	121
Hemlock	2,865	203	220	67	99	532	--	96	737	--	911
Tamarack	70	48	--	--	--	--	22	--	--	--	--
Northern white-cedar	1,432	145	--	165	--	--	491	27	108	496	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	19,032	860	3,272	834	690	1,500	3,024	319	6,366	625	1,542
Hardwoods											
White oak	79	--	--	--	--	41	--	--	--	38	--
Select red oak	1,928	57	67	39	--	323	512	36	249	365	280
Other red oak	448	--	--	--	--	--	220	--	--	228	--
Hickory	--	--	--	--	--	--	--	--	--	--	--
Basswood	2,570	348	951	290	533	148	114	37	149	--	--
Beech	45	--	--	--	--	45	--	--	--	--	--
Yellow birch	1,422	588	309	302	--	170	--	--	--	53	--
Hard maple	5,133	870	2,011	602	803	108	87	113	150	203	186
Soft maple	2,133	--	59	50	491	159	783	400	97	--	94
Elm	5,681	998	1,157	1,147	395	1,057	151	162	51	563	--
Ash	1,174	--	79	131	237	143	104	258	36	186	--
Cottonwood	56	--	--	--	--	--	--	56	--	--	--
Balsam poplar	197	90	41	--	--	--	66	--	--	--	--
Bigtooth aspen	6,644	--	--	398	--	706	3,191	823	258	--	1,268
Quaking aspen	18,417	2,316	2,135	2,206	1,636	189	4,210	1,490	2,715	--	1,520
Paper birch	6,173	197	444	511	412	218	1,448	431	1,417	75	1,020
Black cherry	322	--	97	94	--	--	--	37	41	53	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	68	--	--	--	--	--	68	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	52,490	5,464	7,350	5,770	4,507	3,307	10,954	3,843	5,163	1,764	4,368
All species	71,522	6,324	10,622	6,604	5,197	4,807	13,978	4,162	11,529	2,389	5,910

Table 52.--Sawtimber average annual removals on commercial forest land by species group and county, Northeast Unit, Wisconsin, 1968-1982

(In thousand board feet per year)[1/]

Species group	All counties	County									
		Florence	Forest	Langlade	Lincoln	Menominee	Marinette	Oconto	Oneida	Shawano	Vilas
Softwoods											
Jack pine	6,726	--	--	--	--	--	2,606	--	3,794	--	326
Red pine	9,299	--	2,452	--	601	--	--	--	5,194	--	1,052
White pine	13,020	500	2,472	--	--	5,373	685	--	2,700	538	752
White spruce	3,018	368	1,633	353	--	--	393	--	271	--	--
Black spruce	470	--	--	--	--	--	--	--	470	--	--
Balsam fir	10,013	272	2,275	810	298	--	2,273	211	3,550	--	324
Hemlock	8,223	792	856	287	474	2,487	--	--	3,327	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	3,384	93	--	83	--	--	972	--	355	1,881	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	54,153	2,025	9,688	1,533	1,373	7,860	6,929	211	19,661	2,419	2,454
Hardwoods											--
White oak	380	--	--	--	--	197	--	--	--	183	--
Select red oak	6,580	276	329	190	--	1,407	650	--	1,207	1,767	754
Other red oak	1,065	--	--	--	--	--	--	--	--	1,065	--
Hickory	--	--	--	--	--	--	--	--	--	--	--
Basswood	6,828	634	2,266	501	1,982	728	--	177	540	--	--
Beech	224	--	--	--	--	224	--	--	--	--	--
Yellow birch	6,757	3,153	1,537	1,173	--	894	--	--	--	--	--
Hard maple	17,402	3,483	6,399	1,576	3,765	551	--	--	--	1,020	608
Soft maple	3,247	--	324	232	1,931	201	387	--	--	--	172
Elm	19,324	3,288	3,320	4,110	1,604	3,466	180	584	224	2,548	--
Ash	2,137	--	--	220	1,094	--	--	--	174	649	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	656	365	--	--	--	--	291	--	--	--	--
Bigtooth aspen	8,949	--	--	1,269	--	1,124	2,084	2,318	305	--	1,849
Quaking aspen	29,331	4,556	3,338	5,275	1,241	--	3,184	3,555	4,004	--	4,178
Paper birch	6,127	--	1,055	873	344	255	1,540	252	1,587	--	221
Black cherry	1,005	--	233	302	--	--	--	213	--	257	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--
Total	110,012	15,755	18,801	15,721	11,961	9,047	8,316	7,099	8,041	7,489	7,782
All species	164,165	17,780	28,489	17,254	13,334	16,907	15,245	7,310	27,702	9,908	10,236

[1/] International 1/4-inch rule.

Table 53.--Timber removals from growing stock and sawtimber on commercial forest land by species group, Northeast Unit, Wisconsin, 1967 and 1982

Species group	Growing stock		Sawtimber	
	1967	1982	1967	1982
	Thousand cubic feet		Thousand board feet[1/]	
Softwoods				
Jack pine	3,179	3,216	6,741	4,581
Red pine	696	5,143	3,026	13,098
White pine	2,241	3,073	12,637	14,046
White spruce	392	1,235	2,443	2,497
Black spruce	441	875	604	730
Balsam fir	2,193	6,388	7,900	10,778
Hemlock	2,737	3,871	13,902	10,764
Tamarack	130	125	466	174
Northern white-cedar	637	834	1,349	2,043
Other softwoods	--	--	--	--
Total	12,646	24,760	49,068	58,711
Hardwoods				
White oak	64	230	349	793
Select red oak	1,422	3,416	6,880	12,002
Other red oak	526	557	1,965	2,049
Hickory	236	164	526	477
Basswood	1,227	2,668	6,604	8,337
Beech	189	225	942	932
Yellow birch	1,573	1,449	6,776	5,004
Hard maple	6,303	10,085	31,118	37,084
Soft maple	1,494	3,879	5,351	9,750
Elm	2,937	5,894	12,885	21,501
Ash	1,291	1,586	4,259	4,028
Cottonwood	14	13	74	57
Balsam poplar	--	90	--	218
Bigtooth aspen	9,944	8,296	32,861	24,430
Quaking aspen	31,417	32,353	60,706	81,457
Paper birch	1,994	6,710	6,105	9,109
Black walnut	3	--	25	--
Other hardwoods[2/]	344	321	1,375	654
Total	60,978	77,936	178,801	217,882
All species	73,624	102,696	227,869	276,593

[1/] International 1/4-inch rule.

[2/] Includes black cherry and butternut.

Table 54.--Timber removals from growing stock and sawtimber on commercial forest land by item and species category, Northeast Unit, Wisconsin, 1982

Item	Growing stock						Sawtimber					
	All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods	All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods
	Thousand cubic feet						Thousand board feet[1]					
Roundwood products												
Pulpwood[2]	59,399	7,313	8,913	29,690	1,054	12,429	118,992	11,941	14,720	69,224	2,464	20,643
Saw logs	24,408	3,402	2,010	6,336	1,596	11,064	127,477	18,881	10,338	31,967	8,493	57,798
Fuelwood	4,532	34	29	466	717	3,286	12,707	77	53	1,517	1,940	9,120
Posts	346	7	339	--	--	--	358	8	350	--	--	--
Veneer logs	987	2	--	145	192	648	6,377	16	--	942	1,241	4,178
Poles	24	11	13	--	--	--	92	41	51	--	--	--
Other	13	1	--	--	--	12	65	4	--	--	--	61
Total	89,709	10,770	11,304	36,637	3,559	27,439	266,068	30,968	25,512	103,650	14,138	91,800
Logging residue	5,411	297	351	2,179	315	2,269	8,670	609	637	1,754	706	4,964
Other removals	7,576	365	1,673	1,833	329	3,376	1,855	148	837	483	--	387
All removals	102,696	11,432	13,328	40,649	4,203	33,084	276,593	31,725	26,986	105,887	14,844	97,151

[1] International 1/4-inch rule.

[2] Includes particleboard and waferboard bolts.

Table 55.--Annual mortality of growing stock on commercial forest land by softwoods and hardwoods, Northeast Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967[1/]	1982
Softwoods	6,600	8,094
Hardwoods	24,800	29,278
Total	31,400	37,372

[1/] Figures have been adjusted from those published after the 1968 survey to conform to 1982 volumes because of changes in survey procedures.

Table 56.--Annual mortality of growing stock on commercial forest land by species group and cause, Northeast Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All causes	Cause						
		Insects	Disease	Fire	Animals	Weather	Suppression	Unknown and other
Softwoods								
Jack pine	694	13	14	--	3	34	20	610
Red pine	118	--	--	--	13	--	--	105
White pine	589	2	32	--	30	20	7	498
White spruce	290	19	4	--	2	85	39	141
Black spruce	609	10	79	--	12	150	2	356
Balsam fir	3,888	372	212	--	22	578	2	2,702
Hemlock	800	--	38	--	40	119	--	603
Tamarack	724	--	39	--	114	72	--	499
Northern white-cedar	382	--	11	--	4	82	1	284
Other softwoods	--	--	--	--	--	--	--	--
Total	8,094	416	429	--	240	1,140	71	5,798
Hardwoods								
White oak	39	--	--	--	--	2	--	37
Select red oak	817	--	53	--	18	35	--	711
Other red oak	2,195	--	126	--	--	22	9	2,038
Select hickory	--	--	--	--	--	--	--	--
Other hickory	129	--	--	--	--	--	--	129
Basswood	950	10	72	--	--	62	40	766
Beech	293	--	5	--	--	--	--	288
Yellow birch	1,235	--	156	--	--	128	--	951
Hard maple	1,839	3	234	--	7	171	8	1,416
Soft maple	1,565	--	271	--	1	137	3	1,153
Elm	4,577	227	2,889	--	--	32	--	1,429
Black ash	612	--	36	--	--	43	--	533
White & green ash	176	--	10	--	--	11	10	145
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	12	--	--	--	--	--	--	12
Willow	11	--	--	--	--	--	--	11
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	506	--	21	--	--	19	--	466
Bigtooth aspen	1,897	15	393	--	26	42	--	1,421
Quaking aspen	10,981	4	2,196	--	40	952	17	7,772
Paper birch	1,124	--	357	--	41	52	24	650
Black cherry	282	--	18	--	--	--	38	226
Black walnut	--	--	--	--	--	--	--	--
Butternut	38	--	--	--	--	12	--	26
Other hardwoods	--	--	--	--	--	--	--	--
Total	29,278	259	6,837	--	133	1,720	149	20,180
All species	37,372	675	7,266	--	373	2,860	220	25,978

Table 57.--Annual mortality of sawtimber on commercial forest land by species group and cause, Northeast Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All causes	Cause						
		Insects	Disease	Fire	Animals	Weather	Suppression	Unknown and other
Softwoods								
Jack pine	1,344	66	62	--	10	67	--	1,139
Red pine	491	--	--	--	--	--	--	491
White pine	2,958	8	182	--	172	115	--	2,481
White spruce	902	--	18	--	4	294	--	586
Black spruce	495	55	14	--	--	267	--	159
Balsam fir	6,380	548	587	--	11	1,419	--	3,815
Hemlock	3,150	--	150	--	140	518	--	2,342
Tamarack	188	--	--	--	--	102	--	86
Northern white-cedar	1,110	--	94	--	55	294	--	667
Other softwoods	--	--	--	--	--	--	--	--
Total	17,018	677	1,107	--	392	3,076	--	11,766
Hardwoods								
White oak	91	--	3	--	--	--	--	88
Select red oak	1,677	--	175	--	88	104	--	1,310
Other red oak	1,252	--	60	--	--	93	--	1,099
Select hickory	--	--	--	--	--	--	--	--
Other hickory	4	--	--	--	--	--	--	4
Basswood	1,280	--	226	--	--	174	--	880
Beech	1,068	--	--	--	--	--	--	1,068
Yellow birch	4,440	--	493	--	--	574	--	3,373
Hard maple	3,752	--	559	--	23	475	--	2,695
Soft maple	1,927	--	560	--	--	23	--	1,344
Elm	11,079	490	6,579	--	--	122	--	3,888
Black ash	736	--	7	--	--	61	--	668
White & green ash	271	--	10	--	--	62	--	199
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	2	--	--	--	--	--	--	2
Willow	48	--	--	--	--	--	--	48
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	1,019	--	26	--	--	85	--	908
Bigtooth aspen	3,317	76	934	--	36	55	--	2,216
Quaking aspen	11,708	--	2,433	--	100	1,329	--	7,846
Paper birch	642	--	124	--	3	62	--	453
Black cherry	100	--	--	--	--	--	--	100
Black walnut	--	--	--	--	--	--	--	--
Butternut	69	--	--	--	--	--	--	69
Other hardwoods	--	--	--	--	--	--	--	--
Total	44,482	566	12,189	--	250	3,219	--	28,258
All species	61,500	1,243	13,296	--	642	6,295	--	40,024

[1/] International 1/4-inch rule.

Table 58.--Annual mortality of growing stock and sawtimber on commercial forest land by county and softwoods and hardwoods, Northeast Unit, Wisconsin, 1982

County	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1]		
Florence	2,223	317	1,906	4,056	951	3,105
Forest	6,188	2,099	4,089	11,326	3,997	7,329
Langlade	3,870	658	3,212	5,267	1,025	4,242
Lincoln	3,026	507	2,519	3,927	1,225	2,702
Menominee	3,101	567	2,534	9,105	2,426	6,679
Marinette	6,767	830	5,937	8,011	1,723	6,288
Oconto	2,254	388	1,866	3,877	761	3,116
Oneida	4,339	1,620	2,719	6,397	2,842	3,555
Shawano	2,465	399	2,066	3,781	386	3,395
Vilas	3,139	709	2,430	5,753	1,682	4,071
All counties	37,372	8,094	29,278	61,500	17,018	44,482

[1] International 1/4-inch rule.

Table 59.--Annual mortality of growing stock and sawtimber on commercial forest land by ownership class and softwoods and hardwoods, Northeast Unit, Wisconsin, 1982

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1]		
National Forest	5,997	2,200	3,797	11,543	4,578	6,965
Miscellaneous federal	68	1	67	62	3	59
State	1,577	400	1,177	2,263	659	1,604
County and municipal	6,087	1,013	5,074	6,917	1,622	5,295
Indian	3,480	591	2,889	9,747	2,487	7,260
Forest industry	4,353	1,240	3,113	7,880	2,506	5,374
Farmer	3,666	540	3,126	6,010	924	5,086
Misc. private-corp.	1,382	152	1,230	2,027	374	1,653
Misc. private-indiv.	10,762	1,957	8,805	15,051	3,865	11,186
All owners	37,372	8,094	29,278	61,500	17,018	44,482

[1] International 1/4-inch rule.

Table 60.--Output of timber products by product, softwoods and hardwoods, and source of material, Northeast Unit, Wisconsin, 1981

Product	Standard units	Total		Roundwood products				Plant byproducts	
				Growing stock		Non-growing stock			
		No. of units	Thousand cubic feet	No. of units	Thousand cubic feet	No. of units	Thousand cubic feet	No. of units	Thousand cubic feet
Pulpwood[1]									
Softwoods	Standard[2] cords	254,342	20,062	205,735	16,226	31,039	2,448	17,568	1,388
Hardwoods		751,019	59,341	546,384	43,173	96,702	7,641	107,933	8,527
Total		1,005,361	79,403	752,119	59,399	127,741	10,089	125,501	9,915
Saw logs									
Softwoods	Thousand[3] board feet	31,323	5,503	30,805	5,412	518	91	--	--
Hardwoods		118,229	20,649	108,764	18,996	9,465	1,653	--	--
Total		149,552	26,152	139,569	24,408	9,983	1,744	--	--
Veneer logs									
Softwoods	Thousand[3] board feet	17	2	17	2	--	--	--	--
Hardwoods		6,791	10,98	6,092	985	699	113	--	--
Total		6,808	1,100	6,109	987	699	113	--	--
Fuelwood									
Softwoods	Standard[2] cords	41,565	2,904	903	63	19,788	1,380	20,874	1,461
Hardwoods		366,585	25,631	63,935	4,469	235,226	16,442	67,424	4,720
Total		408,150	28,535	64,838	4,532	255,014	17,822	88,298	6,181
Posts									
Softwoods	Thousand pieces	371	380	338	346	33	34	--	--
Hardwoods		--	--	--	--	--	--	--	--
Total		371	380	338	346	33	34	--	--
Poles									
Softwoods	Pieces	2,700	24	2,700	24	--	--	--	--
Hardwoods		--	--	--	--	--	--	--	--
Total		2,700	24	2,700	24	--	--	--	--
Other[4]									
Softwoods	Thousand cubic feet	183	183	1	1	--	--	182	182
Hardwoods		1,249	1,249	12	12	8	8	1,229	1,229
Total		1,432	1,432	13	13	8	8	1,411	1,411
All products									
Softwoods	Thousand cubic feet	--	29,058	--	22,074	--	3,953	--	3,031
Hardwoods		--	107,968	--	67,635	--	25,857	--	14,476
Total		--	137,026	--	89,709	--	29,810	--	17,507

[1] Includes roundwood and plant byproducts used for particleboard and waferboard.

[2] 128 cubic feet; includes wood, bark, and air space.

[3] International 1/4-inch rule.

[4] Other (industrial production) includes cabin logs, charcoal wood, shingle bolts, pilings, etc.

Table 61.--Output of roundwood products by product, softwoods and hardwoods, and source of material, Northeast Unit, Wisconsin, 1981

(In thousand cubic feet)

Product and species group	All sources	Growing-stock trees			Rough and rotten trees	Salvable dead trees	Other sources
		Total	Sawtimber	Poletimber			
Industrial products							
Saw logs							
Softwoods	5,503	5,412	5,087	325	2	25	64
Hardwoods	20,649	18,996	17,081	1,915	375	1,133	145
Subtotal	26,152	24,408	22,168	2,240	377	1,158	209
Veneer logs and bolts							
Softwoods	2	2	2	--	--	--	--
Hardwoods	1,098	985	985	--	113	--	--
Subtotal	1,100	987	987	--	113	--	--
Pulpwood[1/]							
Softwoods	18,674	16,226	7,832	8,394	262	802	1,384
Hardwoods	50,814	43,173	24,433	18,740	3,351	1,816	2,474
Subtotal	69,488	59,399	32,265	27,134	3,613	2,618	3,858
Piling							
Softwoods	1	1	1	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	1	1	1	--	--	--	--
Poles							
Softwoods	24	24	20	4	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	24	24	20	4	--	--	--
Posts (Round and split)							
Softwoods	380	346	92	254	4	--	30
Hardwoods	--	--	--	--	--	--	--
Subtotal	380	346	92	254	4	--	30
Other							
Softwoods	--	--	--	--	--	--	--
Hardwoods	20	12	12	--	6	--	2
Subtotal	20	12	12	--	6	--	2
All industrial products							
Softwoods	24,584	22,011	13,034	8,977	268	827	1,478
Hardwoods	72,581	63,166	42,511	20,655	3,845	2,949	2,621
Total	97,165	85,177	55,545	29,632	4,113	3,776	4,099
Fuelwood							
Softwoods	1,443	63	42	21	9	864	507
Hardwoods	20,911	4,469	2,770	1,699	859	10,217	5,366
Total	22,354	4,532	2,812	1,720	868	11,081	5,873
All products							
Softwoods	26,027	22,074	13,076	8,998	277	1,691	1,985
Hardwoods	93,492	67,635	45,281	22,354	4,704	13,166	7,987
Total	119,519	89,709	58,357	31,352	4,981	14,857	9,972

[1/] Includes particleboard and waferboard bolts.

Table 62.--Timber products from roundwood by species group and product, Northeast Unit, Wisconsin, 1981

Species group	All products	Pulpwood[1]		Saw logs		Veneer logs	
	Thousand cubic feet	Standard cords[2]	Thousand cubic feet	Thousand board feet[3]	Thousand cubic feet	Thousand board feet[3]	Thousand cubic feet
Softwoods							
Jack pine	4,316	48,460	3,824	1,151	240	--	--
Red pine	5,917	55,844	4,412	5,537	940	--	--
White pine	2,927	6,450	504	13,418	2,280	17	2
White spruce	989	11,243	886	431	90	--	--
Black spruce	900	10,224	806	392	82	--	--
Balsam fir	6,541	78,939	6,220	1,309	274	--	--
Hemlock	3,633	24,191	1,911	7,721	1,312	--	--
Tamarack	118	1,423	111	9	2	--	--
Northern white-cedar	686	--	--	1,355	283	--	--
Other softwoods	--	--	--	--	--	--	--
Total	26,027	236,774	18,674	31,323	5,503	17	2
Hardwoods							
White oak	464	2,221	175	755	132	29	4
Select red oak	5,668	13,176	1,040	7,769	1,361	1,129	183
Other red oak	916	2,129	168	1,256	220	183	30
Hickory	353	463	36	510	89	--	--
Basswood	2,784	8,860	699	8,598	1,533	321	50
Beech	440	27	2	1,688	302	4	4/
Yellow birch	2,133	9,832	776	3,345	594	811	132
Hard maple	12,485	58,464	4,622	22,554	3,767	1,556	255
Soft maple	4,860	30,402	2,405	5,417	962	211	34
Elm	10,736	22,041	1,742	20,240	3,613	1,153	187
Ash	2,181	13,735	10,87	2,847	507	84	13
Cottonwood	43	--	--	239	43	--	--
Balsam poplar	46	--	--	262	46	--	--
Bigtooth aspen	8,044	81,979	6,476	7,254	1,266	196	32
Quaking aspen	32,704	333,276	26,328	29,489	5,148	799	129
Paper birch	9,233	63,901	5,057	5,596	998	268	42
Black walnut	4/	--	--	1	4/	--	--
Other hardwoods[5]	402	2,580	201	409	68	47	7
Total	93,492	643,086	50,814	118,229	20,649	6,791	1,098
All species	119,519	879,860	69,488	149,552	26,152	6,808	1,100

(Table 62 continued on next page)

1/ Includes particleboard and waferboard bolts.

2/ 128 cubic feet; includes wood, bark, and air space.

3/ International 1/4-inch rule.

4/ Less than 500 cubic feet.

5/ Includes butternut and black cherry.

(Table 62 continued)

Species group	Fuelwood		Posts		Poles		Other products
	Standard cords [2]	Thousand cubic feet	Thousand pieces	Thousand cubic feet	Pieces	Thousand cubic feet	Thousand cubic feet
Softwoods							
Jack pine	3,593	252	--	--	--	--	--
Red pine	7,821	546	8	7	1,200	11	1
White pine	2,032	141	--	--	--	--	--
White spruce	190	13	--	--	--	--	--
Black spruce	173	12	--	--	--	--	--
Balsam fir	684	47	--	--	--	--	--
Hemlock	5,858	410	--	--	--	--	--
Tamarack	86	5	--	--	--	--	--
Northern white-cedar	254	17	363	373	1,500	13	--
Other softwoods	--	--	--	--	--	--	--
Total	20,691	1,443	371	380	2,700	24	1
Hardwoods							
White oak	2,186	153	--	--	--	--	--
Select red oak	44,090	3,084	--	--	--	--	--
Other red oak	7,126	498	--	--	--	--	--
Hickory	3,301	228	--	--	--	--	--
Basswood	7,169	502	--	--	--	--	--
Beech	1,947	136	--	--	--	--	--
Yellow birch	9,028	631	--	--	--	--	--
Hard maple	54,743	3,831	--	--	--	--	10
Soft maple	20,769	1,449	--	--	--	--	10
Elm	74,222	5,194	--	--	--	--	--
Ash	8,293	574	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--
Bigtooth aspen	3,862	270	--	--	--	--	--
Quaking aspen	15,703	1,099	--	--	--	--	--
Paper birch	44,839	3,136	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--
Other hardwoods [5]	1,883	126	--	--	--	--	--
Total	299,161	20,911	--	--	--	--	20
All species	319,852	22,354	371	380	2,700	24	21

[2] 128 cubic feet; includes wood, bark, and air space.

[5] Includes butternut and black cherry.

Table 63.--Volume of primary plant residue by use and type of residue, Northeast Unit, Wisconsin, 1981

(In thousand cubic feet)

Use	Wood residue							
	Total		Coarse [1]		Fine [2]		Bark [3]	
	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods
Fiber products [4]	902.0	6,235.4	742.3	5,155.4	159.7	1,080.0	--	41.8
Charcoal	--	43.9	--	16.7	--	27.2	--	0.8
Industrial fuel	1,052.3	3,750.9	553.0	1,387.8	499.3	2,363.1	785.7	4,210.6
Domestic fuel	408.9	968.8	326.5	880.8	82.4	88.0	176.6	422.7
Miscellaneous [5]	182.4	1,184.7	3.5	38.6	178.9	1,146.1	36.6	278.4
Not used [6]	51.8	79.3	15.1	53.6	36.7	25.7	12.7	39.1
Total	2,597.4	12,263.0	1,640.4	7,532.9	957.0	4,730.1	1,011.6	4,993.4

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3] Does not include bark disposal at pulpmills.

[4] For manufacture of pulp, hardboard, or roofing felt.

[5] Livestock bedding, mulch, small dimension, and specialty items.

[6] Includes residue burned as waste.

Table 64.--All live tree biomass on commercial forest land by species group and forest type, Northeast Unit, Wisconsin, 1983

(In green tons)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	5,694,089	3,613,863	689,303	309,165	27,747	--	23,542	19,222
Red pine	11,166,075	202,169	8,086,309	637,022	78,675	--	105,717	6,237
White pine	8,109,482	83,579	453,723	3,344,906	197,637	48,986	92,252	251,227
White spruce	2,854,080	--	122,845	67,313	485,398	784,591	--	127,211
Black spruce	4,782,157	19,526	60,486	98,421	471,360	--	3,027,642	514,978
Balsam fir	14,304,512	11,588	134,561	382,380	4,481,384	37,990	808,486	1,536,575
Hemlock	9,983,088	--	66,863	135,866	258,084	6,049	61,107	361,700
Tamarack	2,552,352	--	--	4,526	93,937	--	448,977	326,155
Eastern redcedar	1,823	--	--	--	--	--	--	--
Northern white-cedar	10,974,705	--	3,982	59,932	983,359	--	92,973	7,290,311
Other softwoods	45,592	--	45,592	--	--	--	--	--
Total	70,467,955	3,930,725	9,663,664	5,039,531	7,077,581	877,616	4,660,696	10,433,616
Hardwoods								
White oak	684,630	--	--	37,280	--	--	--	--
Select red oak	13,276,829	10,881	72,560	167,831	17,275	--	33,519	9,341
Other red oak	3,339,542	105,254	195,883	21,705	5,903	--	--	7,690
Select hickory	--	--	--	--	--	--	--	--
Other hickory	717,334	--	--	1,877	--	--	--	13,796
Basswood	12,784,579	--	--	22,473	--	12,623	--	--
Beech	1,001,154	--	--	--	--	--	--	--
Yellow birch	7,147,597	--	8,785	--	229,243	--	41,327	298,834
Hard maple	42,742,339	--	199,130	52,597	79,860	14,104	16,034	14,608
Soft maple	20,486,161	20,728	116,624	327,503	574,814	--	144,832	252,222
Elm	7,794,238	--	101,398	1,175	71,602	7,539	--	73,089
Black ash	5,885,156	--	--	13,718	277,428	--	6,333	879,066
White & green ash	3,687,108	--	40,043	--	--	--	--	13,837
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	381,354	--	--	222,932	--	--	--	--
Willow	150,779	--	--	--	--	--	--	7,151
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	1,081,983	--	--	--	51,678	36,350	7,781	39,756
Bigtooth aspen	7,812,199	63,668	72,867	40,507	70,277	--	41,489	42,096
Quaking aspen	32,312,379	227,299	903,931	689,152	892,954	158,813	599,059	263,533
Paper birch	20,153,936	50,522	157,686	358,040	621,875	6,850	164,913	738,838
Black cherry	3,633,173	1,383	27,889	17,191	212,586	37,204	74,851	6,619
Black walnut	--	--	--	--	--	--	--	--
Butternut	259,913	--	--	--	--	--	--	--
Other hardwoods	6,457	--	--	--	--	--	--	1,334
Noncommercial species	2,131,491	4,016	8,348	8,084	13,379	--	--	2,653
Total	187,470,331	483,751	1,905,144	1,982,065	3,118,874	273,483	1,130,138	2,664,463
All species	257,938,286	4,414,476	11,568,808	7,021,596	10,196,455	1,151,099	5,790,834	13,098,079

(Table 64 continued on next page)

(Table 64 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotics	Nonstocked
Softwoods								
Jack pine	15,112	162,403	--	64,688	740,787	6,565	--	21,692
Red pine	7,126	282,823	--	280,488	1,073,433	406,076	--	--
White pine	87,131	269,907	203,654	2,112,992	677,247	286,241	--	--
White spruce	5,453	--	97,360	317,041	644,796	202,072	--	--
Black spruce	151,669	--	62,497	98,582	237,844	39,152	--	--
Balsam fir	130,045	17,869	1,288,195	2,071,540	2,463,880	936,985	--	3,034
Hemlock	3,841	30,030	504,538	8,251,656	203,136	95,323	--	4,895
Tamarack	1,370,895	16,800	55,697	161,492	41,676	32,197	--	--
Eastern redcedar	--	--	1,823	--	--	--	--	--
Northern white-cedar	61,325	--	739,010	1,009,223	524,214	210,376	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	1,832,597	779,832	2,952,774	14,367,702	6,607,013	2,214,987	--	29,621
Hardwoods								
White oak	--	400,870	46,794	102,440	97,246	--	--	--
Select red oak	6,784	5,634,419	108,436	3,704,563	2,335,032	1,176,188	--	--
Other red oak	--	1,823,457	49,329	270,567	779,710	51,728	--	28,316
Select hickory	--	--	--	--	--	--	--	--
Other hickory	--	154,829	--	530,434	16,398	--	--	--
Basswood	--	182,996	193,059	11,659,520	605,832	108,076	--	--
Beech	--	22,565	26,970	908,118	43,501	--	--	--
Yellow birch	1,452	25,937	359,283	5,826,832	207,997	147,907	--	--
Hard maple	--	556,925	344,982	38,585,390	2,341,856	528,544	--	8,309
Soft maple	53,084	1,114,486	2,697,553	8,799,136	4,915,524	1,469,655	--	--
Elm	1,804	71,002	1,433,590	5,443,698	552,881	31,654	--	4,806
Black ash	2,156	--	3,347,422	900,619	393,259	65,155	--	--
White & green ash	--	57,715	1,029,946	2,267,707	232,319	42,129	--	3,412
Sycamore	--	--	--	--	--	--	--	--
Cottonwood	--	--	62,886	56,657	38,879	--	--	--
Willow	--	--	106,715	7,884	19,897	9,132	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	174,848	116,637	611,973	42,960	--	--
Bigtooth aspen	19,781	376,540	53,334	1,277,258	5,371,724	382,658	--	--
Quaking aspen	36,715	382,483	709,642	5,008,894	20,885,667	1,545,471	--	8,766
Paper birch	154,251	713,323	639,457	4,377,119	5,253,397	6,917,665	--	--
Black cherry	826	90,310	65,052	1,781,572	1,212,593	69,139	--	35,958
Black walnut	--	--	--	--	--	--	--	--
Butternut	--	--	6,944	176,213	76,756	--	--	--
Other hardwoods	--	--	--	5,123	--	--	--	--
Noncommercial species	--	29,479	93,743	1,602,933	313,596	55,260	--	--
Total	276,853	11,637,336	11,549,985	93,409,314	46,306,037	12,643,321	--	89,567
All species	2,109,450	12,417,168	14,502,759	107,777,016	52,913,050	14,858,308	--	119,188

Table 65.--All live tree biomass by species group and tree biomass component, Northeast Unit, Wisconsin, 1983

(In green tons)

Species group	All components	Biomass component				
		All live 1- to 5-inch trees	Growing stock		Cull	
			Boles	Tops and limbs	Boles	Tops and limbs
Softwoods						
Jack pine	5,694,089	617,980	3,129,787	1,335,448	440,661	170,213
Red pine	11,166,075	858,669	7,108,928	3,063,794	98,317	36,367
White pine	8,109,482	584,045	4,987,646	2,157,162	270,331	110,298
White spruce	2,854,080	437,904	1,609,674	669,391	96,851	40,260
Black spruce	4,782,157	2,448,695	1,576,901	658,809	83,522	14,230
Balsam fir	14,304,512	4,456,124	6,754,824	2,783,640	239,897	70,027
Hemlock	9,983,088	515,878	6,198,873	2,638,051	444,114	186,172
Tamarack	2,552,352	907,364	1,090,843	457,986	77,975	18,184
Eastern redcedar	1,823	--	--	--	1,303	520
Northern white-cedar	10,974,705	2,961,178	4,628,795	1,879,243	1,133,353	372,136
Other softwoods	45,592	--	--	--	31,967	13,625
Total	70,467,955	13,787,837	37,086,271	15,643,524	2,918,291	1,032,032
Hardwoods						
White oak	684,630	13,390	426,309	177,114	51,639	16,178
Select red oak	13,276,829	371,675	8,314,299	3,535,390	745,103	310,362
Other red oak	3,339,542	140,231	1,752,701	735,242	516,371	194,997
Select hickory	--	--	--	--	--	--
Other hickory	717,334	76,720	429,438	182,716	19,971	8,489
Basswood	12,784,579	740,642	7,998,049	3,389,928	471,197	184,763
Beech	1,001,154	78,836	481,457	204,885	176,211	59,765
Yellow birch	7,147,597	795,831	3,410,655	1,431,845	1,085,582	423,684
Hard maple	42,742,339	5,406,068	23,036,899	9,791,701	3,235,973	1,271,698
Soft maple	20,486,161	4,695,450	9,309,440	3,956,477	1,884,252	640,542
Elm	7,794,238	1,072,845	4,173,329	1,734,939	588,543	224,582
Black ash	5,885,156	1,533,298	2,656,295	1,111,150	465,085	119,328
White & green ash	3,687,108	301,286	2,273,237	968,297	106,069	38,219
Sycamore	--	--	--	--	--	--
Cottonwood	381,354	7,037	262,888	111,429	--	--
Willow	150,779	--	70,837	29,756	43,365	6,821
Hackberry	--	--	--	--	--	--
Balsam poplar	1,081,983	56,618	698,711	301,373	17,634	7,647
Bigtooth aspen	7,812,199	841,349	4,358,979	1,891,698	504,372	215,801
Quaking aspen	32,312,379	5,459,920	16,620,131	7,147,067	2,204,019	881,242
Paper birch	20,153,936	2,432,304	11,501,014	4,891,647	959,021	369,950
Black cherry	3,633,173	566,969	1,457,395	621,797	722,618	264,394
Black walnut	--	--	--	--	--	--
Butternut	259,913	--	172,062	73,520	10,037	4,294
Other hardwoods	6,457	1,334	3,610	1,513	--	--
Noncommercial species	2,131,491	--	--	--	1,885,391	246,100
Total	187,470,331	24,591,803	99,407,735	42,289,484	15,692,453	5,488,856
All species	257,938,286	38,379,640	136,494,006	57,933,008	18,610,744	6,520,888

Table 66.--Sampling errors[1/] for estimates smaller than the Unit totals of volume, net growth, removals, and area of commercial forest land, Northeast Unit, Wisconsin, 1983

Sampling error	Commercial forest land	Growing stock			Sawtimber		
		Inventory	Growth	Removals	Inventory	Growth	Removals
Percent	Thousand acres	- - - -Thousand cubic feet- - - -			- - - -Thousand board feet[2/] - - -		
1	735.5	14,193,455	775,335	18,787,284	91,644,866	4,446,574	71,353,852
2	183.9	3,548,364	193,834	4,696,821	22,911,216	1,111,643	17,838,463
3	81.7	1,577,051	86,148	2,087,476	10,182,763	494,064	7,928,206
4	46.0	887,091	48,458	1,174,205	5,727,804	277,911	4,459,616
5	29.4	567,738	31,013	751,491	3,665,795	177,863	2,854,154
10	7.4	141,935	7,753	187,873	916,449	44,466	713,539
15	3.3	63,082	3,446	83,499	407,311	19,763	317,128
20	1.8	35,484	1,938	46,968	229,112	11,116	178,385
25	1.2	22,710	1,241	30,060	146,632	7,115	114,166
50	0.3	5,677	310	7,515	36,658	1,779	28,542
100	0.1	1,419	78	1,879	9,164	445	7,135

[1/] At the 68-percent probability level.

[2/] International 1/4-inch rule.

Table 67.--Sampling errors for county totals of growing-stock volume, net growth, removals, and area of commercial forest land, Northeast Unit, Wisconsin, 1983

(Percent of estimate)

County	Commercial forest land	Growing stock		
		Inventory	Growth	Removals
Florence	1.74	7.06	9.74	54.10
Forest	1.22	4.68	6.27	40.25
Langlade	1.40	5.79	7.08	52.47
Lincoln	1.37	6.44	7.77	59.25
Menominee	1.86	5.82	10.83	61.52
Marinette	1.07	4.61	5.51	35.80
Oconto	1.46	5.95	7.29	66.38
Oneida	1.22	5.41	6.64	39.52
Shawano	1.70	6.57	9.01	87.52
Vilas	1.41	5.49	7.34	54.62
All counties	.44	1.78	2.32	15.84

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The timber resource of the Northeast Wisconsin Survey Unit declined 5.7 percent in commercial forest area and increased 23 percent in growing-stock volume between 1968 and 1983. Highlights and statistics from the fourth inventory of this unit are presented for area, volume, growth, mortality, removals, utilization, and biomass.

KEY WORDS: Statistics, area, volume, growth, mortality, and removals.

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